

Materials and Care 2022



We make cities smart
and beautiful

→ Foreword

We have prepared this information brochure with the intention to provide you with complex technical support including information about mmcité products and services. It matters to us that you are fully aware of all the details of our products and therefore are able to forward all pieces of information to the end clients. The content of brochure will help you during the business communication, to act more independently and professionally and to obtain all needed for tender documentation much faster. It is recommended to have the information brochure in electronical version with you all the time, ideally saved in all your mobile tools such as your mobile phones, tablets, or laptops.

→ Content of the information brochure

Information brochure is a summarization of all the most important technical pieces of information about mmcité products. The chapter materials and production deals with used materials. The maintenance chapter is described on. The customer has to be fully informed about maintenance of the products in order to prevent the early aging and devaluation of the product. The chapter referring to packaging, transport, manipulation and storage explains the main principles. Also, the anchoring section is an integral part.

→ Web page mmcite.com

The images in this brochure are for illustrative purposes only. Supplementary information on each product can be found on the **website**. There you will always find the desired product's 3D model, technical specifications in graphical and text forms, and corresponding anchoring instructions. The mmcité product catalogue is also available for download there

→ Photo archiv

So that you can use our photos fully independently, we've prepared an archive on **Google drive** (02_mmcité photos), where you will find professional shots of our products sorted by product range. They are also easily searchable in the archive thanks to **tags** corresponding to the location, name or type of product. If you need print-quality photos, please refer to

our marketing department. All information can be found in the "**Gdrive manual**", which we can send you upon request, or you can download it from the same folder.

→ Notification!

We believe the information brochure will be a useful tool for you, a source of information for your business meetings. As it is being updated only once a year, kindly follow mmcité web page (mmcité.com) which is being updated on regular basis.

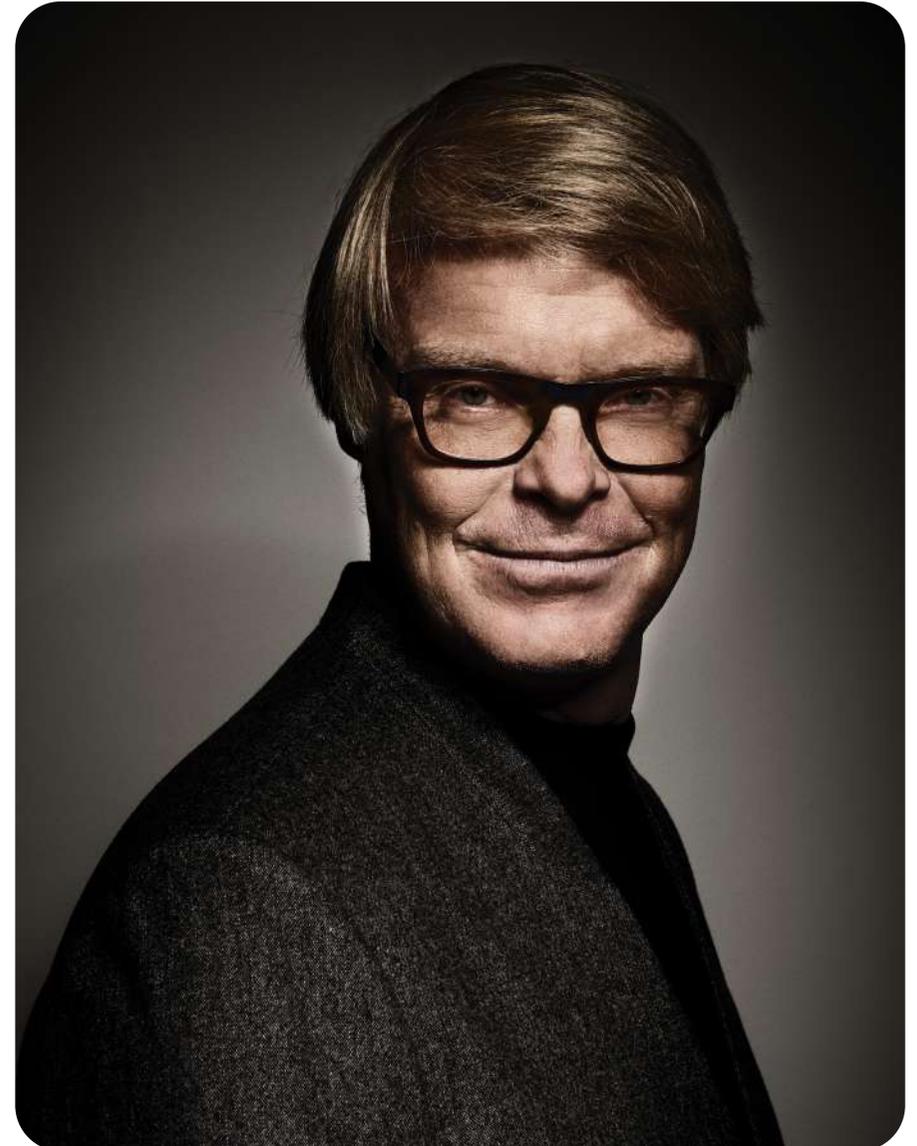
Founder of mmcité

mmcite.com

Mgr. A. David Karásek

born April 3, 1969 in Brno, Czech Republic

- **education:** 1983 – 1987 High School of Applied Arts in Brno, Product design studio
1987 – 1994 Academy of Arts, Architecture and Design in Prague, Department of Design Zlín (Prof. Z. Kovář, Prof. P. Škarka)
- **current activities:** designing street furniture and other products for public areas, managing mmcité)
- **educational activities:** specialist assistant at the studio of industrial design at the School of Fine Arts at VUT in Brno (1994-1995)
external assistant specialist at the studio of industrial design at the School of Mechanical Engineering at VUT in Brno (since 1999)
- **other activities:** member of judge panels at international design competitions



Introducing mmcité group

mmcite.com

mmcité was founded in 1994, handling the design, production and delivery of street furniture. The chief designer is David Karásek
The main company headquarters is located in Bílovice, near Uherské Hradiště in the Czech Republic

mmcité also has subsidiaries:

- mmcité sk in Slovakia
- mmcité hu in Hungary
- mmcité pl in Poland
- mmcité es in Spain
- mmcité ro in Romania
- mmcité br in Brasil
- mmcité mx in Mexico
- mmcité at in Austria
- mmcité uk in United Kingdom

At the moment mmcité keeps on more than 200 employees.

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All products made by mmcité are specially designated for outdoor public areas, even though they suit the interiors of buildings just as well. mmcité products are excellent in terms of resistance against bad weather and vandalism. All elements are firmly attached to the floor. Due to a wide variety of products and extensive assortment of standard colors, mmcité does not keep finished products in stock, just their individual parts until a binding order is received.

Besides small furniture, mmcité also develops, produces and distributes bus stop shelters or shelters for bicycles. Thanks to our development laboratory and technical offices, we are capable of offering not only our standard catalog products, but also completely new shelters based on the customer's needs and wishes.

Shelters are built with emphasis put on design, functionality and quality, particularly in city environments. We focus on creating moderate designs, often with glass walls that you can see through into the surrounding area, and which do not darken the area within the shelter. Simple shelter designs are created on purpose to make for a smooth assembly process at the place of installation, without needing special means.

The primary structural materials include steel, glass and twin-wall cellular polycarbonate.

We use common steel, as we do for small furniture. All steel parts are zinc coated with a 5-80µm layer. All steel parts are then powder coated in standard colors.

We recommend using two different colors on one shelter.

We consider glass to be very suitable material not only for appearance reasons, but also for its high resistance to vandalism (sprayer creations can be easily removed) and against bad weather conditions. As a matter of principle, our shelters use safety glass that is 6, 8 or 10 mm thick (depending on the type of shelter). Glass panels are usually marked with white safety strips or rings.

Twin-wall polycarbonate is used for shelters with arched roofs. Polycarbonate is a suitable alternative for roof glass and its advantage (besides flexibility), compared to glass, is its low weights, reducing the load of the supporting structure.

Another option is to make outside walls of AUREO shelters from coated wooden panels.

Our bus stop shelters are usually equipped with a drainage system (with the exception to GEOMERE shelters) and as a standard they are supplied with a bench made of jatoba wood.

mmcité shelters can include one or two City-light advertisement showcases.

Setting up a shelter and its anchoring must be carried out in accordance with the installation instructions issued by mmcité.

All catalog bus stop shelters are designed for region III – snow load of 150kg/m² and resistant to winds reaching 25m/sec. The customer ordering the furniture is responsible for providing the complete and accurate information and requirements for loads other than standard loads. Most of the shelters can be adopted to different loads if required.

Standard delivery periods:

- for standard catalog products, we offer FCA Bílovice 4–5 weeks from confirming the order or 6–7 weeks including the delivery to the customer within Europe (excluding new products and stainless steel products)
- for standard catalog products, we offer 9 weeks including the delivery to the customer anywhere in the world.
- the delivery period for non-standard products is specified individually according to the complexity of the order.

mmcité is presented on the following websites:

Archello
Archilovers
Architonic
Archiexpo
Archiproducts
Archinfo
Archiweb
Archdaily
Landezine

mmcité group is mentioned in the following books:

Hall of fame – design for a better quality of life, Volume 2, reddot edition, 2007
New urban elements, Links edition, 2007
Street furniture, Links edition, 2007
Czech Design 01, Prostor edition, 2007
Czech Design 1995 – 2000, Prostor edition, 2001
New urban elements, Links edition, 2010
Street furniture, Braun Publishing AG, 2010
Czechscape, Jaroslav Fragner Gallery, 2014
Lebensräume | Burgenland, edition Marlit, 2017
Public space CZ / Urban Landscape, Jaroslav Fragner Gallery, 2017
Toys and Games, CzechTrade, 2018
Monocle, Winkontent Limited 2021

mmcité group is a partner of the following organizations:

Moravian Gallery in Brno
Citizen-action Czech Selection
Czechdesign.cz group
Design Cabinet CZ foundation
Jaroslav Fragner gallery
Idea competition for students of Superstudio architecture

Architectural association KRUH
Global non-profit acting reSITE
Landscape festival Prague
Film and architecture festival
Manifesto – alternative gastro and culture market in Prague
ARCHIP – support of foreign students of architecture via the form of a joint workshop
3rd annual competition for talented students from the College of Environmental Design at Berkeley
Stowarzyszenie architektury krajobrazu
KRUH Architecture Association
reSITE non-profit organisation
Czech Chamber of Architects – Czech Architecture Award
City Conference "Pěšky městem" (CZ)

ISO 9001:2009	Quality management system for the production and assembly of steel structures
ISO 14001:2005	environmental management system
OHSAS 18001:2008	Occupational health and safety management system
FSC (Forest Stewardship Council)	Verifying the authenticity of wood. Products carrying the FSC sign are independently certified to assure the consumer that it comes from forests that are looked after and managed in order to comply with social, economical and ecological requirements of today's and future generations. More information at info.fsc.org , mmcité is registered under Certificate Code NC-COC-065387.
certificate of qualification	For steel structure products and steel constructions (particularly for railway and special projects)
certificate of conformity of production	Available upon request
CE according to EN 1090-1,2 declaration of performance	According to directive of European Parliament and Council (EU) no. 305/2011

mmcité fights copying

mmcité products have a protected industrial design, registered with the authorized bodies ensuring legal protection. The partners of mmcité assume responsibility for the protection against copying mmcité products, or their production by third parties and exert all efforts towards preventing any copying of mmcité products.

mmcité contributes to the sustainable development

Majority of materials used by mmcité company are recycled and mostly and largely recyclable. Steel structures are made of fully-recyclable steel or aluminium alloy and composite materials with high resistance are carefully chosen.

By international certification of tropical wood guarantees mmcité guarantees the minimum negative effects on the environment. Within the range of resysta family, new products of ecological Resysta material are offered. Resysta is extremely durable material, resistant to sun, rain, frost and even salt water. It consists of 60% rice husks, 22% common salt and

18% mineral oil and maintains the visual appearance of wood. In comparison to wood, it requires minimal maintenance and is highly resistant to pests, mold and cracks. Unlike other composite materials, it looks great, having a smooth surface. Resysta already meets most of the future environmentally sustainable material requirements. It is recycled – using the real waste of rice husks, and fully recyclable. Upon request, we can provide the internationally-acknowledged certification LEED system (Leadership in Energy and Environmental Design) for so-called green buildings, ensuring the approval of third party that the building/space has been projected and built in compliance with strategies for improvement of building projects considering the environment.

mmcité aims to enhance the quality of public realms by using environmentally-friendly materials with the aesthetic value persevered.

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Materials and Care

Steel for structural purposes



All steel parts are made of weldable steel for structural purposes with guaranteed chemical purity, minimal tensile strength, yield strength and ductility. Steel frames are made of S235JR grade.

Base anticorrosion protection is carried out by the application of zinc coating onto the surface or electro-coated if needed. Further, the steel structure is treated using technologically sophisticated method of polyester powder coating in fine matt structure, in RAL colour shade.

These coatings ensure excellent use properties due to their chemical adhesion, mechanical flexibility and resistance to weather conditions. Scientific research has proven that the combination of both technologies show synergy for much longer lifespan than only zinc coating or only powder coating applied.

Process of anticorrosion surface treatment of steel for structural purposes:

1. degreasing, blasting of steel (GH18) up to SA 2,5 purity level or pickling of the surface
2. base anticorrosion layer:
 - a. **zinc application** (according to shape, size, function)
 - Zn arch spraying (metallization) layer of 40 – 60µm
 - hot dip galvanization layer of 40 – 80µm
 - electrogalvanization layer of 5 – 25µm
 - b. **electro-coating / e-coat** (unleaded epoxy cathode coating) layer of 15 – 30µm
3. filling up with putty and grinding of uneven surface
4. phosphatising and surface passivation
5. drying in furnace at the temperature of 190°C
6. electrostatic application of powder coating – layer of 60 - 80µm NDFT (nominal thickness of the layer)



7. curing of powder paint – polymerization at the temperature of 190°C, shape of the steel part is taken into account
8. visual control and adhesion testing in compliance with EN ISO 2409 (grid testing of coating adhesion to steel)

→ Standard colour shades

RAL 1000	Green beige	RAL 6027	Light green
RAL 1012	Lemon yellow	RAL 7002	Olive grey
RAL 1013	Oyster white	RAL 7006	Beige grey
RAL 1019	Grey Beige	RAL 7016	Anthracite grey
RAL 1020	Olive yellow	RAL 7021	Black grey
RAL 2004	Pure orange	RAL 7022	Umbra grey
RAL 2005	Fluorescent orange	RAL 7024	Graphite grey
RAL 2008	Bright red orange	RAL 7032	Pebble grey
RAL 3003	Ruby red	RAL 7035	Light grey
RAL 3012	Beige red	RAL 7043	Traffic grey B
RAL 3015	Light pink	RAL 8019	Grey brown
RAL 3016	Coral red	RAL 8024	Beige brown
RAL 3020	Traffic red	RAL 9005	Jet black
RAL 4010	Telemagenta	RAL 9006	White aluminium
RAL 5002	Ultramarine blue	RAL 9007	Grey aluminium
RAL 5011	Steel blue	RAL 9010	Pure white
RAL 5015	Sky blue	DB 703	Deutsche bahn
RAL 5019	Capri blue		Corten Colour
RAL 5024	Pastel blue	AKZO NOBEL	Interpon D1036 SW302G
RAL 6007	Bottle green	AKZO NOBEL	Interpon D1036 SW325i

RAL 6010 Grass green

RAL 6018 Yellow green

RAL 6019 Pastel green

→ Two-tone steel structure

The LBQ and LRA bench models are available with the steel structure in a two-tone design. The colour options for RAL are fixed, they cannot be combined with other colour options. Expected delivery is 8 weeks from the order date.

RAL combinations external_internal:

RAL 7016_1021
RAL 7022_6018
RAL 8019_5015
RAL 9005_1013
RAL 9006_6027
RAL 9007_2004

Concerning the products that are not further powder coated and the final surface treatment is hot dip galvanization, completely smooth surface can never be achieved.

There is visible welding and various colouring of zinc coating due to materials used.

Even though the zinc is used for the anti-corrosion protection, it is important to stress out that the zinc coating itself is of low corrosion resistance. Clean zinc exposed to atmospheric impacts oxidizes and the layer of non-stable zinc oxide partly covers the surface ("white rust"). The "white rust" represents temporary aesthetic feature of the surface, which is of momentary character and does not decrease the resistance to corrosion. The surface with "white rust" unifies within few months and obtains the same aesthetics as the rest of the surface without "white rust".

Also, small areas of missing zinc coating can appear, however these are repaired using 96% zinc paint.

All the above minor defects are in compliance with valid standards for hot dip galvanization (ČSN EN ISO 14713-3 standard) as they originate from the hot dip galvanization process.

For that said, these properties cannot be accepted as a claim.

→ Standard serigraphy colours

RAL 1028	Melon yellow
RAL 2004	Pure orange
RAL 3020	Traffic red
RAL 5002	Ultramarine blue
RAL 6018	Yellow green
RAL 7016	Anthracite grey
RAL 8007	Fawn brown
RAL 9003	Signal white
RAL 9005	Jet black
RAL 9006	White aluminium
RAL 9007	Grey aluminium

There are two types of protection system that can be supplied, in order to withstand the corrosion agresivity of the particular location (according to EN ISO 12944-5).

→ **C4 environment category** - high risk - corresnponds to urban and industrial atmospheres with moderate pollution - standard one-layer coating

→ **C5 environment category** - very high risk - industrial areas with high humidity and aggressive atmospheres - two-layer coating consisting of primer and coating.

Standard RAL powder coating colours are supplied exclusively by IGP company, only in two cases by Akzo Nobel.

Standard RAL powder coating colours are supplied exclusively by IGP company, only in two cases by Akzo Nobel.

Other RAL colours will be available for the add-up cost dependant on the quantity of products ordered (any product range):

The surcharge is applicable for each non-standard RAL colour. The production time of products in non-standard RAL colour is 6-8 weeks.

Steel structure of mmcité products usually consists of several parts.

Combination of two colour shades on one product is recommended due to aesthetics and design.

Recommended colour combination for steel structure:

RAL 9006 – RAL 9007

RAL 9006 – RAL 7016

RAL 9007 – RAL 7016

Selected products include also serigraphy, lettering and other graphical motives. Other than standard serigraphy is upon request and with price add-up.

→ Control

1. clean the surface with hot water and with soap or mild detergent
2. check the connecting material. In case it has loosen, tight it up.
3. check the surface of steel structure. In case of found damage, repair it.

→ Maintenance

The corrosion might begin if the surface of steel structure is mechanically damaged.

Therefore, it is recommended for the user to check the steel structure every six months.

If a mechanical damage or already begun corrosion is found, it is necessary to repair the damage immediately according to manufacturer's instructions.

→ Reparation procedure

Before maintenance, it is necessary to consider the following points:

- scope of the damage (In case of more extensive repair, it is recommended to let mmcité carry out the repair)
- ambient temperature must be between +5°C - +40°C
- relative air humidity cannot exceed 80%
- surface temperature cannot be lower than 3°C above condensation point

Reparation procedure of anticorrosion protection:

1. mechanically clean the damaged spot, the surface has to be clean and dry
2. degrease the damaged steel parts with industrial alcohol or gasoline
3. regrind the surface using sandpaper P120
4. apply zinc coating (minimally 96% zinc contain)
5. once dried, gently use the sand paper P280 to smooth the surface
6. apply the powder coating (according to the manufacturer's instructions)

Notification:

The colour shade after a repair can slightly differ from the original one – they will match approx. after 12 months.

The warranty does not apply to defects caused by careless handling, storage, assembly; usage and maintenance. All have to be done according to the manufacturer's instructions. Please note the powder coating is not abrasion resistant and is not intended for walkable items, such as ART tree grids. Eventual mechanical damage cannot be considered as a matter of claim.

WOW!

Types of zinc coating:

Description of zinc coating procedure to be found on p.154

→ **Zn arch spraying (metallization)** – a technology used for steel grids or side frames of benches. Zinc wires are melted, entrained into the gun air jet and being sprayed onto the steel part. Metallization enables to create optimally thick layer of zinc; no further blasting is needed as the surface is smooth. Zinc arch spraying can never be used as a final anticorrosion surface treatment (without powder coating).

→ **Hot dip galvanization process** – a steel part is hung and immersed into a bath of molten zinc. When emerged, complete and fast outlet of zinc has to be done, making use technical holes in steel structure. Therefore, there is a tendency for the surface not be completely even and blasting has to be carried out. Hot dip galvanized surface as the greatest lifespan and

resistance to mechanical damage. In some cases, it can be applied has the final surface treatment.

→ **Electro galvanization** – a steel part is hung and immersed into saline-zinc solution. A direct current is running, using zinc anode and steel conductor. Consequently, zinc is deposited onto the surface. Even zinc layer is applied thanks to electro galvanization method. It is suitable for very small steel parts.

→ **Electro coating /e-coat** – makes use of similar principle as electro galvanization, unleaded epoxy cathode coating is applied instead of zinc.

Corrosion-resistant steel



Corrosion-resistant steel is commonly called stainless steel. This category of high-alloy steel types is more resistant to atmospheric corrosion. Thanks to the chemical composition, there is a so-called passive layer on the surface which is being continuously renewed and prevents the corrosion. They resist to industry-influenced air, waste water and even mineral and organic acids in adequate concentration.

The ability of corrosion-resistance of stainless steel is not 100% as it is dependant primarily on the amount and ratio of alloying elements, mainly chrome and nickel.

AISI 304 (according to DIN X5CrNi18 10) stainless steel grade is used as a standard, however the grade of AISI 316 (according to DIN X5CrNiMo 17 12 2) is recommended for more demanding areas such as seacoast.

These stainless steel types are very well weldable and significantly tough even at very low temperature. Common (or some) stainless steel loses toughness at low temperatures and therefore cracks (unlike common steel for structural purposes). The surface of stainless steel is treated by brushing or polishing. Brushed stainless steel surface is of matt look, polished stainless steel reminds chrome.

Despite the excellent properties of stainless steel against oxidation and corrosion, it is not possible to prevent dirt deposition and therefore potential surface damage e.g. caused by aggressive environment, high air humidity, or air dust. The dust contains also small particles of metals and rust that were released from other objects and can be left on the surface of street furniture and cause various stains, colouring and deformation.

Grease

and other dirt depositions are considered as the common phenomenon. The hand-touch leaves the visible mark on the surface, for instance after the manipulation with the product without using protective gloves or during common usage of street furniture.



→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

→ Maintenance

Process of obligatory maintenance:

1. clean the surface using sponge with hot water with soap or
 - a. mild solution of hot water with detergent used for common cleaning
 - b. organic (alcoholic) solvent used to remove fingerprints or grease marks
 - c. agent for cleaning and maintenance of stainless steel surfaces, bought at acknowledged manufacturer (in case steel dust particles attach onto the surface)
2. clean the surface with hot water with soap after using solvents and wash it with clean water
3. dry using cloth until the surface is fully dry

Regarding the brushed or polished surface, the direction of hand cleaning should be in the direction of surface pattern. The steel spring mattress or abrasive detergents on sand character cannot be used in any case as they can damage the stainless steel surface.

Notification:

After thorough cleaning, the surface is free of grease and therefore also of any surface protection. Moreover, the matters from cleaning detergents always leave on the surface and can result in irremovable marks. Therefore, it is necessary to treat the product after the "cleaning procedure". Spray for treatment of stainless steel (foam in the spray) is recommended.

If the treated and polished surface is covered by this thin layer, it is very well protected and also resistant to finger prints, grease and other dirt. All other cleaning of stainless steel products that are maintained on regular basis is faster and easier. The manufacturer recommends the application even on new product, prior to common usage.

↘ WOW!

Corrosion resistance of steel is based on the combination of chemical matters, mainly chrome, nickel and molybdenum, optionally also titanium. These chemical matters are not contained in steel for structural purposes at all. If AISI316 to AISI304 is compared, it contains more nickel and molybdenum that considerable increase resistance against aggressive conditions.

Aluminium alloys



Aluminium alloys are very suitable for the exterior use thanks to great appearance for the long time, easy and cheap maintenance, low weight, great resistance to corrosion, sea water and tropical weather conditions, great weldability, great polishing-ability and the possibility to apply various colour shades.

Aluminium castings, sheets or extruded profiles of aluminium alloys are used for some elements of street furniture. Depending on used technology, AlMg3, AlSi7Mg03 possible AlSi10MnMg grades are used. The use of aluminium castings without further surface treatment (for instance powder coating or anodisation) is utterly standard and problem-free. As a standard procedure, the product parts made of aluminium alloys are blasted

using abrasive granulate that creates the characteristic matt look.

Aluminium and its alloys are of low density (i.e. low weight; one-third if compared to steel) and of very good resistance against corrosion. The surface of aluminium cast can start oxidize. In that case, the uneven colour changes appear. The influence of corrosion-environment is not usually distinct; the passive layer that prevents other corrosion is created. The whole surface unifies over some time. The aluminium oxidation caused by climate is a common phenomenon and therefore is not considered as a defect and cannot be accepted as a claim. In case the client wants to avoid the possible oxidation, the surface can be treated with powder coating. Some parts can be equipped by decorative anodisation (the colour of anodised surface is dark grey).

Aluminium does not have negative impact on living organism. It is easily recyclable and the production of aluminium alloys burdens the environment in much lower scale than the production of comparable steel products.



Aluminium alloys

mmcite.com

Products that contain aluminium alloy castings: MINIUM, QUINBIN litter bin, ISAC, MIELON, DONAT bollards, MIELA, PORTIQUOA, VLTAU, PORT, EMAU, EMAU SOLO park benches, and GOMEZ, ELK bicycle stands.

Cladding of MINIUM, QUINBIN litter bins is made of extruded aluminium alloy profiles.

→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

→ Maintenance

Process of obligatory maintenance:

1. clean the surface with hot water with soap or mild detergent
2. check the connection material. In case it has loosen, tight it up.
3. check the surface of aluminium structure. In case of found damage, repair it.

→ Reparation procedure:

Before maintenance, it is necessary to consider the following points:

- scope of the damage (In case of more extensive repair, it is recommended to let mmcité carry out the repair)
- ambient temperature must be between +5°C - +40°C
- relative air humidity cannot exceed 80%
- surface temperature cannot be lower than 3°C above condensation point

Reparation procedure of anticorrosion protection:

1. mechanically clean the damaged spot, the surface has to be clean and dry
2. degrease the damaged steel parts with industrial alcohol or gasoline
3. regrind the surface using sandpaper P120
4. apply the powder coating (according to the manufacturer's instructions) or apply the spray colour

Notification:

The colour shade after a repair can slightly differ from the original one – they will match approx. after 12 months.

↘ WOW!

Aluminium alloys are best to achieve uniqueness of the parts as they are casted into mold or extruded through the tool. The alloys enable a lot of visual options: natural look of aluminium alloy, powder coated surface, anodised surface.

If the project is specified in tender in details, it is difficult to replace it with any alternative because it is always needed to invest into the molds. Appearance of aluminium parts is nice even over the years. Aluminium parts are 100% recyclable and the production of these parts has significantly smaller impact on the environment thanks to the fact that precise sophisticated molding or extrusion manufacturing procedures significantly eliminate the need of further machining process.

Concrete



Self-compacting concrete – SCC

Self-compacting concrete has similar mechanical properties as common concrete. Its main advantages are: high homogeneity of the substance, minimal quantity of pores, strength, high quality surface and high lifespan. Neither vibration nor compaction is necessary during the production which improves working environment thanks to positive effect on health and safety at work.

SCC was developed in Japan at the end of 80's last century. In Europe the concrete established itself thanks to international project, financed by European Union, during 1997-2000.

mmcité uses mixture with comprehensive strength of 80MPa pressure for our concrete cast bench. Backrests of SATELLITE benches are made of SSC. Standard colours are white or light grey.

High-strength concrete – HSC

High-strength concrete is used for specific thin-wall concrete street furniture. The concrete is made of fine mixture of aggregate, cement, microsilica, water and other matters. By contrast to common concretes, high-strength mixtures contain polymer fibres increasing the flexural strength and tensile strength. Among other advantages belong excellent fluidity, minimal segregation, higher resistance, smooth surface with no or minimal appearance of tiny bubbles and partial flexibility.

The mixture of high-strength concrete, that mmcité uses, reaches the comprehensive strength of 100Mpa pressure. The BETTER litter bins, side parts of REFORMA benches, or upstands of MINIUM litter bins are made of high-strength concrete. Standard colour concept is white and dark grey.



High-performance Concrete – HPC

High-performance Concrete (HPC) is named after its high resistance to pressure and long lifespan, and has a higher elasticity, all of which increases the stability of the concrete.

It excels most where there is a need to decrease weight, remove internal steel reinforcements or achieve improved durability in high-stress environments.

Its lifespan, predicated at up to 200 years, and reduced volume and weight have a significant impact on the long-term sustainability of a living environment – less demand for floor space or foundations beneath concrete furniture, and lower costs for transporting and lifting large concrete parts. The standard colour options for the CONSTRUQTA bench are white and dark grey.

👉 **WOW!**

All three above mentioned kinds of concrete enable to cast the parts with „exposed“ surface.

As a standard, the surface of concrete parts is protected by colourless transparent impregnation limiting the water or moisture coming in and it facilitates the maintenance.

The impregnation has to be recoated every 2 years. There are small openings on the surfaces caused by air bubbles. It does not concern the defect and the mechanical properties are not lowered.

Colour deviation of one colour used for different products of the same range can be maximally 15%. Thanks to the comprehensive strengths over 100MPa (HSC and UHPC), it is possible to cast the parts with thin walls which contributes to the modern look of the product.

Glass



Glass is used for shelter roofing and vertical panels. Side and rear walls are made of safety glass.

The quality of glass is guaranteed by its manufacturers based on certified tests, certificates, technical and safety sheets. The glass panels are installed into special profiles, possibly into fixtures on steel structure, which are filled with appropriate sealing so that steel does not touch glass. If the steel touches glass, the glass deformation might occur (due to ambient environment or properties of the used materials, or other impacts). For Aureo and Geomere shelters, it is possible to supply screen printing designed against bird strikes.

→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

The user is obliged to check the fixture including sealing, every 6 months. In case any defect occurs, the sealing must be repaired according to the supplier's instructions or the customer should order the repair directly from the supplier

→ Maintenance

We recommend washing glass panels with common detergents twice a year.

Obligatory maintenance procedure:

1. wash the glass panels with hot water and mild detergent
2. check the deformation of glass panels



3. tighten the connecting components
4. check, eventually change, the sealing on AL strips

During the winter period, it is necessary to remove the continuous snow layer out of the roofing. It is needed to meet the personal safety and it is recommended to remove the snow symmetrically, from both sides at the same time.

Notification:

As a standard, tempered glass is not tested (certified) on spontaneous breakage.

Upon request, the certification according to HST (Heat Soak Test) complying with EN 14179 standard is possible. Among others, the test simulates the conditions that cause spontaneous breakage of glass panels. The price of glass panel with this certification is much higher and can be sent upon request. However, without this certification, the spontaneously broken glass panels cannot be claimed to the supplier. According to the manufacturers of glass panels, it concerns 0,1% of produced glass panels that suffer from spontaneous breakage.

There are locations and placing (such as railing, walkable boards, high building) where higher demands are (such as railing, walkable boards, high building)

where higher demands on safety are strictly necessary – the project manager has to evaluate this factor.

It is needed to immediately Exchange the glass panels if any deformation occurs.

⚡ **WOW!**

It is not possible to cut or drill into the tempered glass after toughening process.

Photovoltaics for solar shelters



For the shelters we use the unique BIPV technology - laminated photovoltaic cells in glass sheets. These cells are encapsulated in plastic film to protect them from external factors. The glass panels are made of tempered glass. The combination of the photovoltaic cells, the foil encapsulation and the tempered glass creates a toughened bonded safety glass with photovoltaic cells inside.

→ **Benefits of BIPV:**

- Modern and individual design
- Stable construction
- Easy maintenance
- Custom applications

→ **Maintenance of photovoltaic panels**

In order to get maximal performance of photovoltaic modules and optimal power output, we recommend that the surface of solar panels should be cleaned regularly, minimally once or twice a year.

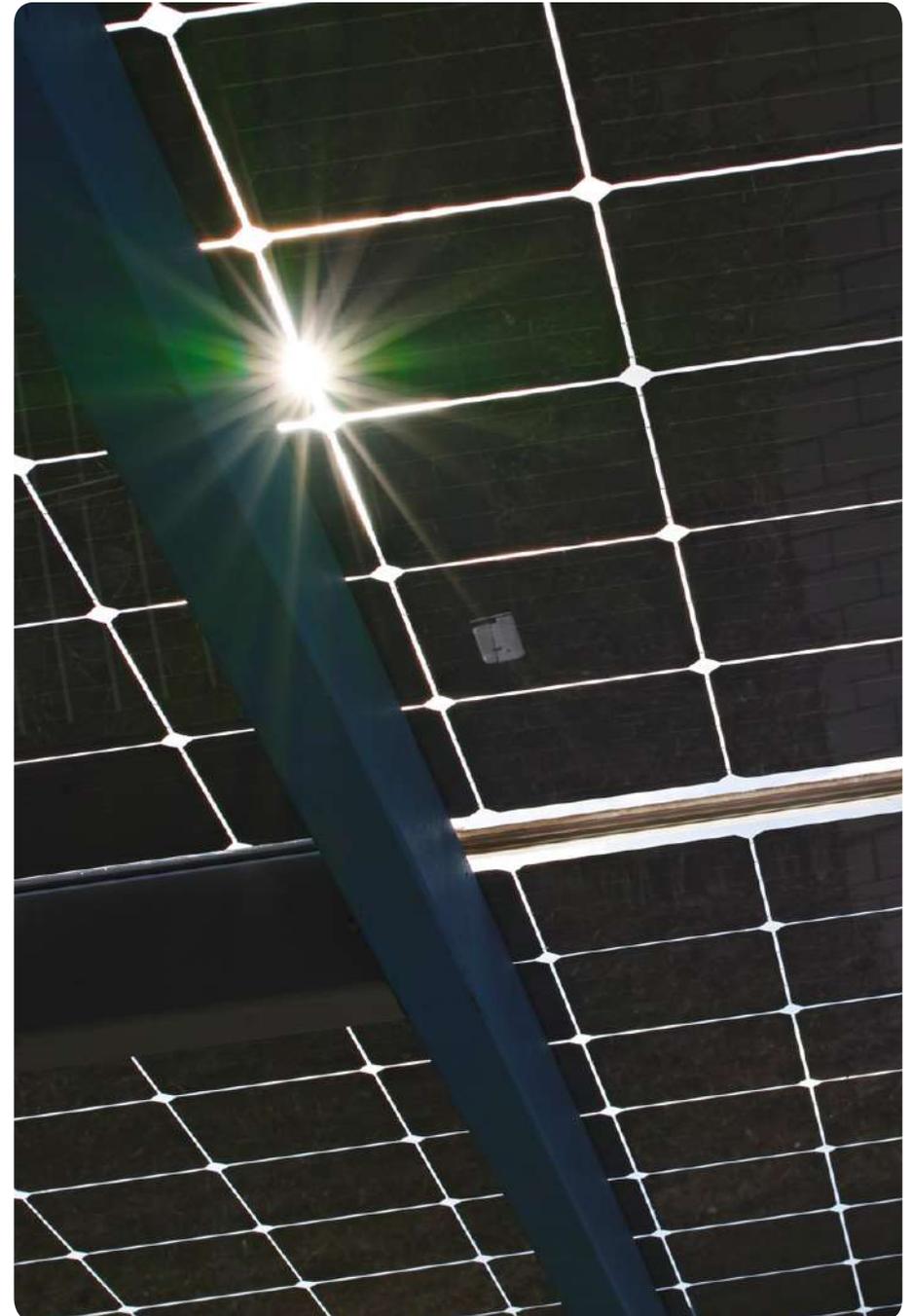
Kindly follow the recommendation for the cleaning procedure of photovoltaic panels below:

Clean warm water and soft cloth/sponge is sufficient in case of common dirt.

If the scale is broader, the cleaning agent for glass is recommended.

Do not use aggressive cleaning agents or chemicals, not even sharp or abrasive elements.

It is not recommended to clean glass panels at the temperatures of 50° C.



Sandwich panel



Sandwich panels represent a possible option for GEOMERE shelter glazing.

Outer layer of the panels is made of zinc-coated steel structure with painted surface treatment in various RAL colours. Inner layer is formed by isolating core of QuadCore® or IPN foam. Thanks to a possibility to paint panels and structure, the colours can match and aesthetically pleasing solution can be achieved.

The panels are connected to roof steel structure using self-taping screws with sealing washers. The assembly is simple and lasts a short time.

→ Control:

- As dirt can damage the surface coating, control the spots which are not sufficiently washed with rain water.
- Control the fixing of roof panels to steel structure

→ Maintenance

To achieve maximal operating life and aesthetics of painting on sandwich panels, it is important to remove dust and impurities properly. Compliance with correct maintenance procedure significantly reduces the risk of corrosion.

→ Maintenance procedure:

Wash the ceiling and panels using warm water with mild detergent
After cleaning, properly rinse with clean water.



Wood



Wood is considered as a commonly available natural material that is used by mankind for the whole time being. Flexibility, strength and durability are considered as the advantageous features of this material and wood types that optimally combine these three properties are chosen for street furniture elements.

Wood works well even in the ambient environment with unstable humidity if proper and regular maintenance is carried out.

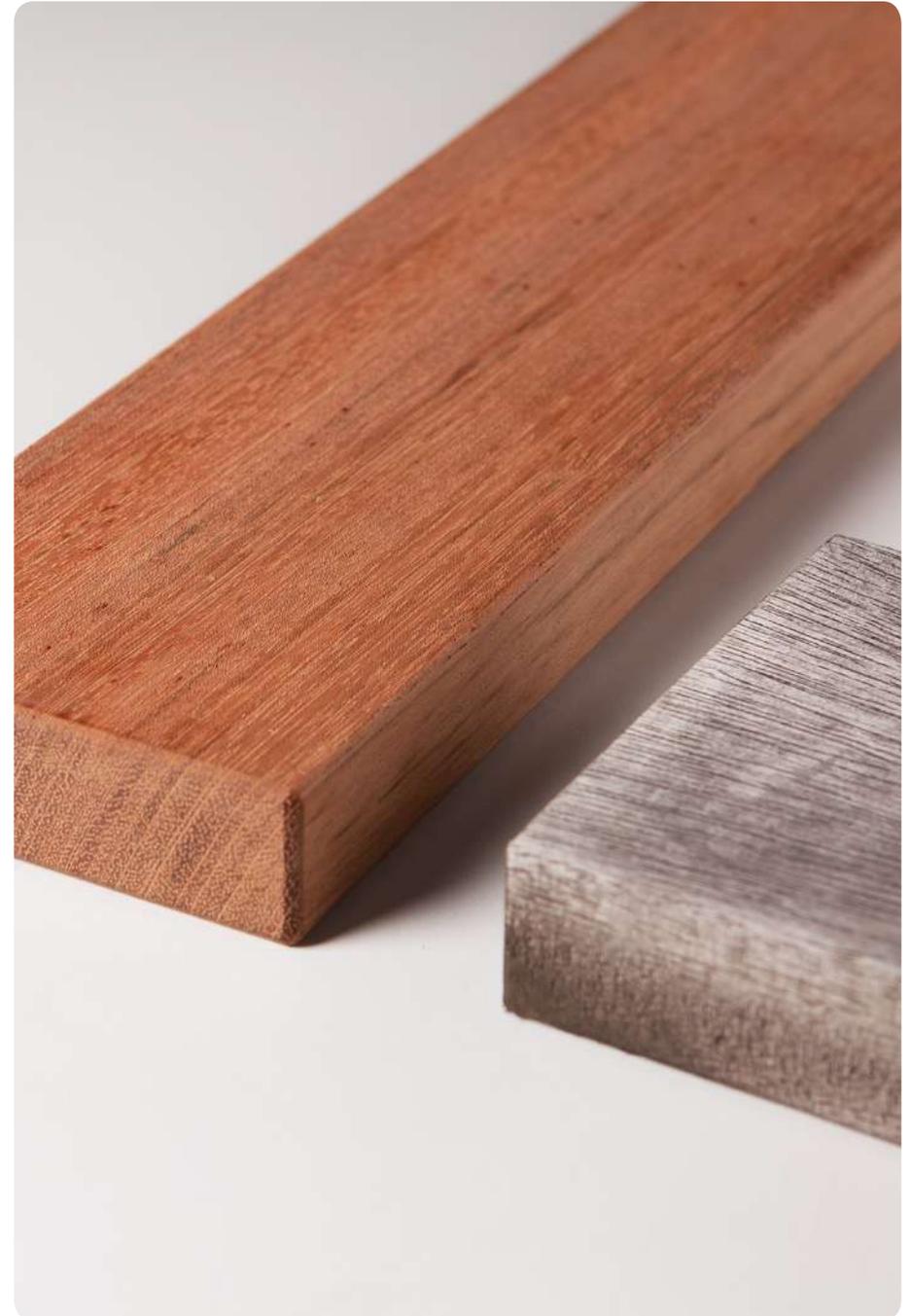
Jatoba tropical wood

Jatoba tropical wood belongs to the most widely used wood imported from South America.

It is almost maintenance-free, exceptionally stiff, strong, hard and highly resistant to fungus, molds and termites. Another great advantage is its resistance to vandalism (hardness of cca $130 \text{ Nmm}^{-2} = 2820 \text{ lbF}$, value according to Janek) makes it difficult for cutting or graving). It belongs to the very hard wood (wood with the hardness higher than 80 Nmm^{-2}).

Jatoba can exhibit quite a large colour variation of cherish-red-brown shades. The typical characteristics of all tropical wood kinds are gradual graying effect and opening and closing pores due ambient temperature and air moisture. The opening usually appears as small cracks. It concerns repeatable and natural phenomenon, dependent on ambient temperature and air moisture, which does not lower the quality and does not limit the usage. These above mentioned common features cannot be accepted as a claim as they are not considered as defects.

In case site furnishings of tropical wood are located in the exterior, 5 mm sagging or twisting per 1m length is allowed.



Notification:

In case of natural tropical wood (without oil treatment), during the first few weeks after installation, a red resin called kopal might leak out. Therefore, to prevent possible damages (temporary coloring of the pavement), we recommend protecting the area around and under the product using e.g. PE foil, OSB board or other material. mmcité minimizes kopal leakage by pressure washing out in mmcité premises. The final client has to be advised about this natural phenomenon when product is to be placed onto the decorative pavement.

If kopal leaks out onto the pavement, it is possible to wash it out, but it has to be done within the shortest possible delay. It might be washed with pressure stream of water, wipe it using cloth or even detergent including sodium hypochlorite.

The Kopal leakage is a natural behaviour of jatoba wood. Since it does not represent quality aspect, it is not a matter of claim.

If the wood is oil treated, the possibility of kopal leakage is limited. The oil treatment is carried out for the extra-charge.

WOW!

In case site furnishings of tropical wood are located in the exterior, sagging or twisting are allowed. For the Woody benches, sagging of 10mm/m is allowed.

Robinia wood

Robinia wood (commonly called as false acacia or black locust) is yellow-brown, heavy, hard (hardness of 80-90 Nmm-2 = 1700 lbF, value according to Janek), resistant wood sourced in Europe. However, originally it comes from Mexico and South America.

It is highly resistant to putrefaction and fungus. These qualities make it suitable for outdoor use.

When exposed to weather conditions, it behaves in a similar way like tropical wood. The surface of the wood gradually changes to soft, silver-grey color as the pigments in the surface layer of the wood start fading away. The enlargement of pores occurs mainly on front sides looking like cracks.

It regards repeatable phenomenon as the pores close and open depending on ambient temperature and humidity and it does not lower the quality and functionality of the wood. Therefore, it is not subject of the claim.

Acacia wood is supplied without surface treatment or treated with transparent semi- matt oil for outdoor use.

In case site furnishings of acacia wood are located in the exterior, 5 mm sagging or twisting per 1m length is allowed.

Notification:

In case of robinia wood (without oil treatment), during the first few weeks after installation, saponins might leak out. The saponins can colour the paving or steel structure. The final client has to be advised about this natural phenomenon. If saponins leak out onto the pavement, it is possible to wash it out, but it has to be done within the shortest possible delay. It might be washed with pressure stream of water, wipe it using cloth or even detergent including sodium hypochlorite.

The above mentioned natural behaviours do not represent quality damage and are not accepted as claims.

If the wood is oil treated, the possibility of saponins leakage is limited.

The oil treatment is carried out for the extra-charge.

Control of jatoba and robinia wood

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

Maintenance of jatoba and robinia wood

We recommend that you simply allow your furniture to weather naturally this way and maintain the silver patina with regular, gentle cleaning with soft-soap flakes dissolved in warm water (not detergent). Let the wood weather to a natural grey or oil to maintain the rich tones.

To preserve the original color of the wooden parts, the oil treatment is necessary.

Frequency of treatment with oil depends on location and intensity of usage. Generally, it is recommended to apply the oil once the surface of the wood becomes dull and the rain water is absorbed by wood (instead of staying on the surface). The first maintenance application should be carried out by the end of the third month after installation. Then the treatment should be done minimally once a year (we also recommend the pre and post-seasonal treatment using oil). The choice of oil should be discussed with the manufacturer.

Treatment and repair of jatoba and robinia wood

In order to keep the surface smooth, carry out the grinding (using P150 sand paper or rough sponge) during the usage. The recommended interval is every 6 months.

Teak oil treatment application:

If it is needed to carry out the surface treatment, the preparation phase is very important.

The wood moisture shouldn't exceed 16%, the air temperature shouldn't drop under +5°C and relative air humidity over 70%.

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P150–P220
3. apply 2 layers of teak oil using sponge or cloth (time interval specified by the manufacturer)
4. fasten the connecting material

In case of more extensive repair, it is recommended to let mmcité carry out the repair.

→ Laser engraving in wood

On wooden pieces of furniture made from jatoba, robinia and thermally modified ash, we engrave our branding using a laser. Upon request, we can also engrave inscriptions or graphics.

Thermally modified ash

Ash wood belongs to the most durable European wood, listed to durabili-

ty class 2. It is specific for its solidity and resistance to rot and fungi. It concerns high-quality wood with distinctive growth rings creating beautiful aesthetics. It is auburn with dark brown core.

During thermal treatment, ash wood is exposed to high temperatures for approximately 24 hours. Thermo-treated ash wood is considerably more resistant to fungal and insect damage and gets dark brown after the thermalisation.

The typical characteristics of thermally modified ash are gradual greying and the opening and closing of pores in response to the surrounding air temperature and humidity. When the pores open it usually looks like cracks. This is a repeating process which does not harm the quality or limit the use of the product. The wood can exhibit a relatively wide range of colour variation.

These are all natural characteristics of thermally modified ash, and will not be accepted as grounds for a complaint.

→ Inspection

Regular inspection of the surface can protect against long-term damage. We recommend inspecting every six months.

→ Maintenance

To preserve the original colour of the wood, it must be treated with oil. The required frequency of oil treatments depends on the bench's location and how heavily it is used. As a general rule, we recommend applying oil whenever the surface of the wood appears matte and any rainwater is absorbed by the wood (instead of sitting on the surface). The first maintenance should not be needed until at least a month after installation. Maintenance should be carried out once to twice a year. Suitable oils for treating thermal ash include e.g. Osmo Thermoholz-Öl.

→ Processing and repair

To maintain the smooth appearance of the wood during use, rub the surface with P150 grit sandpaper

→ Oil application

The preparation phase is very important. Before carrying out any mainte-

nance or repair, make sure of the following:

- the humidity of the wood should not exceed 16%
- the air temperature should not be below 5°C
- the relative humidity of the air should not be above 70%

Mandatory maintenance should be carried out every 6 months

1. Clean the surface with water and a gentle cleaning product
2. Rub the surface with P150-P220 grit sandpaper
3. Apply 2 coats of oil using a sponge or cloth (check the manufacturer's specifications for the time interval between coats)
4. Tighten connecting parts.

In case of more major repairs, we advise that you leave the repair to the manufacturer, or order new wood lamellas.

Thermally modified pine

ThermoWood® heat-treatment of Nordic pine wood was developed in Finland and is manufactured in a patented manner in special drying chambers at a temperature range of 160 – 215 °C.

As a result of modification process including heat and humidity treatment, we obtain a new type of material with an innovated internal wood structure.

ThermoWood® heat-treatment is carried out with use only of heat and water steam and the whole process is completely environmentally-friendly. This modified ThermoWood® achieves new physical and mechanical properties including longer durability.

In comparison to the same but non-heat treated wood, deformation in terms of swelling and subsequent shrinkage is decreased by up to 60%. During the thermal process, all resin and leachable biological substances are removed and mainly, cellulose, lignin and hemicellulose (sugar chains) are decomposed. Wood is thus resistant to insect, fungi and rot.

Gradual greying effect is a natural property of thermo wood nevertheless can be prevented by regular oil application with UV protection. Capillary cracks can also occur.

Both mentioned represent repeatable phenomena dependant on surrounding environment (temperature, air humidity) and do not decrease wood quality not even limit the furniture usage.

The above said natural characteristics do not represent any defect and therefore cannot be recognised as a claim.

→ Inspection

Regular inspection of the surface can protect against long-term damage. We recommend inspecting every six months.

→ Maintenance

To preserve the original colour of the wood, it must be treated with oil. The required frequency of oil treatments depends on the bench's location and how heavily it is used. As a general rule, we recommend applying oil whenever the surface of the wood appears matte and any rainwater is absorbed by the wood (instead of sitting on the surface). The first maintenance should not be needed until at least a month after installation. Maintenance should be carried out once to twice a year. Suitable oils for treating thermal ash include e.g. Osmo Thermoholz-Öl.

→ Processing and repair

To maintain the smooth appearance of the wood during use, rub the surface with P150 grit sandpaper

→ Oil application

The preparation phase is very important. Before carrying out any maintenance or repair, make sure of the following:

- the humidity of the wood should not exceed 16%
- the air temperature should not be below 5°C
- the relative humidity of the air should not be above 70%

Mandatory maintenance should be carried out every 6 months

1. Clean the surface with water and a gentle cleaning product
2. Rub the surface with P150-P220 grit sandpaper
3. Apply 2 coats of oil using a sponge or cloth (check the manufacturer's specifications for the time interval between coats)
4. Tighten connecting parts.

In case of more major repairs, we advise that you leave the repair to the manufacturer, or order new wood lamellas.

Larch wood

Larch wood is considered as a suitable option for low-maintenance urban furniture. Wood is semi-hard, solid and durable. In comparison to spruce or pine wood, larch is specific for its high density (average value of 600 kg/m³).

Sap layer is light brownish-yellow, core from ochre to reddish-brown. If exposed to weather, the colour turns to silver-grey in the course of time. Wood texture is closer-grained than spruce. It is one of the heaviest soft wood types and one of the best conifers.

The most valued characteristic is its natural resistance caused by high content of resin and high wood density.

Further, larch wood offers other benefits such as long lifetime, great resistance to decay and fungi, high mechanical resistance with great strength in compression and excellent resistance to depreciation.

For that said, there is no need to apply any surface treatment onto larch wood; not even for outdoor installations.

Larch wood is quite stable, however due to weather conditions, lengthwise splits or cracks at the end of the lamellas might appear, as typical for other wood types.

Additionally, peeling of top growth rings might occur.

All the above mentioned characteristic features cannot be considered as a material defect.

Wood used for the street furniture is solely of European origin.

→ Control

Instructions for regular control and general maintenance procedure to be found in the appendix no. 1

→ Maintenance

1. Process of mandatory maintenance:
2. Clean the furniture with warm water and mild detergent
3. Gently remove dirt
4. Dry the surface using clean soft cloth
5. Check and tighten the connecting material fastening wood lamellas to steel structure

Birch multiplex multi-layer plywood

Sheathing of outdoor Pinecone gazebo is formed by scales made of multi-layer Multiplex plywood. It regards waterproof plywood containing many layers and veneers which are bonded together with glue (3rd gluing class in accordance with DIN 68705).

Plywood is treated firstly with oil impregnation and two layers of wood mordant including oil additive to achieve maximum wood preservation. Important! Moderate cracking of surface, which can also appear in the area of edges, belongs to the natural characteristics of plywood having no impact on its lifespan. This process can be eliminated by regular renewal of coating and cannot be regarded as a subject of claim.

→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1.

→ Maintenance

It is important to renew the coating, preferably every year after winter period, using lacquer brush or roller. In case of mechanical damage of lacquered surface, it is necessary to repair the damaged spot immediately to prevent further damage of the whole scale.

1. spray the scales using cleaning agent
2. after 10 minutes wash them with warm water and remove all dirt
3. regrind surface of wood with sandpaper P60-P80
4. apply lacquer on dry scales at ambient temperature between 15-25°C. It is necessary to stir lacquer properly prior to its usage. The first coating dries approximately in 24 hours.
5. regrind surface of wood with sandpaper P60-P80 once again
6. apply second coating. Interval between coatings needs to be minimum 24 hours, however always needs to be subjected to real conditions.
7. wipe off redundant (not soaked in) lacquer after approx. 10-15 minutes, ideally with dry brush, eventually with absorbent cloth.

To accentuate lacquer the procedure can be repeated.

Maintenance instructions for treatment of birch Multiplex multi-layer plywood:

In case of plywood surface reparation, it is important to pay attention to preparation of surface, moisture of wood and climatic conditions of the environment. The wood moisture should not exceed 16%, the air temperature shouldn't drop under +5°C and relative air humidity needs to be lower than 70 %.

→ Reparation procedure

Reparation procedure – slightly damaged wood:

1. clean the surface with water and mild detergent
2. re grind it with sandpaper P120 - P150
3. clean the surface, apply appropriate lacquer on dry scales, after 10 minutes polish them with cloth
4. fasten the connecting material, fixing the scales with the construction

Reparation procedure – more extensively damaged wood:

1. clean the surface with water and mild detergent
2. re grind it with sandpaper P120 - P150
3. apply the impregnating agent using sponge. It dries for about 4 hours. Clean the surface, apply appropriate lacquer on dry scales, after 10 minutes polish them with cloth.
4. fasten the connecting material, fixing the scales with the construction

In case of more extensive repair of neglected wood surface, it is recommended to let producer of street furniture carry out the repair, eventually to order new scales.

Multilayer beech plywood with a top layer of oak

The wooden seat of the MANTA chair is made from multilayer beech plywood with a top layer of oak.

This waterproof plywood is produced by glueing and pressing many individual layers of veneer together and then machining it.

Oak decor is impregnated with oil to preserve the natural appearance of the wood.

The coloured models, whether coated (the colouring fully covers the wood) or stained (the colour penetrates into the wood, leaving the grain visible), are treated with a surface layer of PUR varnish.

Each piece of wood has its own unique character and colouring, so no two products are the same.

With wooden products, you can get familiar with every last knot which betrays the natural origin of the material. The natural structure and man-made processing of each piece of wood causes differing reactions to staining and sanding. UV exposure can even cause colour differences to appear between individual pieces of wood in a single product. These natural inconsistencies are not grounds for a complaint. Being a natural material, wood is constantly breathing and reacting to the world around it. As a result, a product may begin showing tiny hairline cracks in the varnish or minor penetration of the surface wood during its lifespan. Liquid permeation has a negative effect on the surface, as this may cause stains or rings from glasses etc., so we recommend cleaning up spilt liquids immediately.

Damage to the varnish or discolouration of the surface may also be caused by placing hot drinks on the surface. This unwanted occurrence can be prevented by using coasters or saucers.

→ Maintenance

Caring for oiled surfaces

The oiled finish on the surface requires regular care (at least every 2 years, ideally once a year) and the use of preventative barriers (i.e. coasters). Clean dust and other fine particles from the surface using a soft, clean, dry cloth made from material which that won't scratch the surface (cotton, linen).

Immediately mop up spilt liquids from the surface using a fabric or paper cloth to prevent the liquid from spreading across the surface. Then, wipe with a well wrung cloth along the grain of the wood, and immediately wipe it dry.

For more serious spillages, again, do not allow the liquid to soak into the surface. Immediately remove the spillage and wipe the top in the same manner. We recommend regularly checking oiled furniture, and if needed,

wipe away any new stains. Never use concentrated or abrasive cleaning products (abrasive pastes, powders), this will damage and wear away the oil layer!

During production, the wood may absorb oil unintentionally, which is why some parts of the surface may be rougher or porous to the touch. The oil itself also dries out naturally.

Rough and grazed spots, shiny parts, stains, small nicks, dirt from shoes etc. can be fixed with a new oil coating.

Instructions for reapplying the oil treatment:

1. clean the surface of dust and dirt with a cotton cloth
2. rub with fine-grit sandpaper (P220+) along the wood grain
3. clean the surface of sanding dust with a cotton cloth
4. using a sponge, apply the oil evenly across the whole surface
5. after 15 minutes, wipe dry any excess oil with a clean cotton cloth
6. leave the oil to absorb for at least 12 hours.
7. repeat the process if needed.

If using the recommended treatment kit (Carebox from Ton a.s.), follow these instructions exactly as written. If using another commercial product to reapply the oil, follow the manufacturer's guidelines and test it out in a less visible place.

Caring for varnished surfaces

Varnish finishes are low-maintenance. Clean dust and other dirt from the surface using a soft, clean, dry cloth made from material which won't scratch the surface (cotton, linen, soft leather). When wiping, do not press hard as this may cause irreversible dents on the surface. Wipe dry any spilt liquids immediately. Do not allow major spillages to seep into the surface, mop them up with a lightly damp cloth and then wipe dry.

Cleaning and caring for the furniture with any special equipment is not strictly necessary. However, if you use them, follow the manufacturer's instructions and test the products in a less visible place first. Never use concentrated or abrasive cleaning products (abrasive pastes, powders), this will damage and wear away the varnish.

Resysta



Resysta is used for particular products from mmicité range as an alternative to wood.

Resysta is extremely durable material, resistant to sun, rain, frost and even salt water. It consists of 60% rice husks, 22% common salt and 18% mineral oil. Thanks to its surface, it meets the visual appearance and haptic quality of wood. In comparison to wood, it requires minimal maintenance and is highly resistant to pests, mold and cracks. Unlike other composite materials, it looks great and it has a smooth surface. Resysta already meets most of the future environmentally sustainable material requirements.

Base material for its production is a worldwide waste, rice husks. It concerns recycled and fully recyclable material.

Resysta profiles can be cut, bent, grinded, glued, coloured and even welded together. The possibility of colour painting is a great advantage if compared to other composite materials.

Hollow material is not as strong as full wooden boards; therefore, resysta profiles are reinforced inside.

Due to the fact that standard prefabricated extruded profiles are used, these can be used only for particular mmicité products. The current range of Resysta Family includes benches, litter bins and planters; thus the whole project might be realized using mmicité products made of eco-friendly material.

→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no.



→ **Maintenance**

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P60-P80
3. fasten the connecting material

Regarding the UV-stability, if glazing and further transparent lacquer are applied, 10- year warranty is guaranteed.

→ **Reparation procedure**

1. clean the surface with water and mild detergent
2. regrind it with sandpaper P60-P80
3. clean the surface, apply two layers of treatment (special paint for Resysta has to be used)
4. check the connecting material and fasten it if loosen

↘ **WOW!**

All resysta boards used for seat and backrest are produced on our own machines. We have come up with shapes of the boards, including the weight balancing.



High pressure laminate – HPL

High Pressure Laminate (HPL) boards are ideal for street furniture due to their resistance.

It concerns laminated boards made of natural fibres with decorative laminates made of melamine or hardened synthetic resins according to EN 438 standards. HPL material consists of 60% paper and 40% resins (hardened phenol-formaldehyde resin for core layers and melamine-formaldehyde resins for top layers). High Pressure Laminate boards are stiff, resistant to abrasion, moist, humidity and water vapour. HPL has great use properties as hygienic, easily maintained, water-proof surface with long lifespan and high resistance to chemicals and UV radiation. HPL surface does not require any further surface treatment.

Wide range of decors, various formats and thickness of boards are available. As a standard, we use white or black HPL.

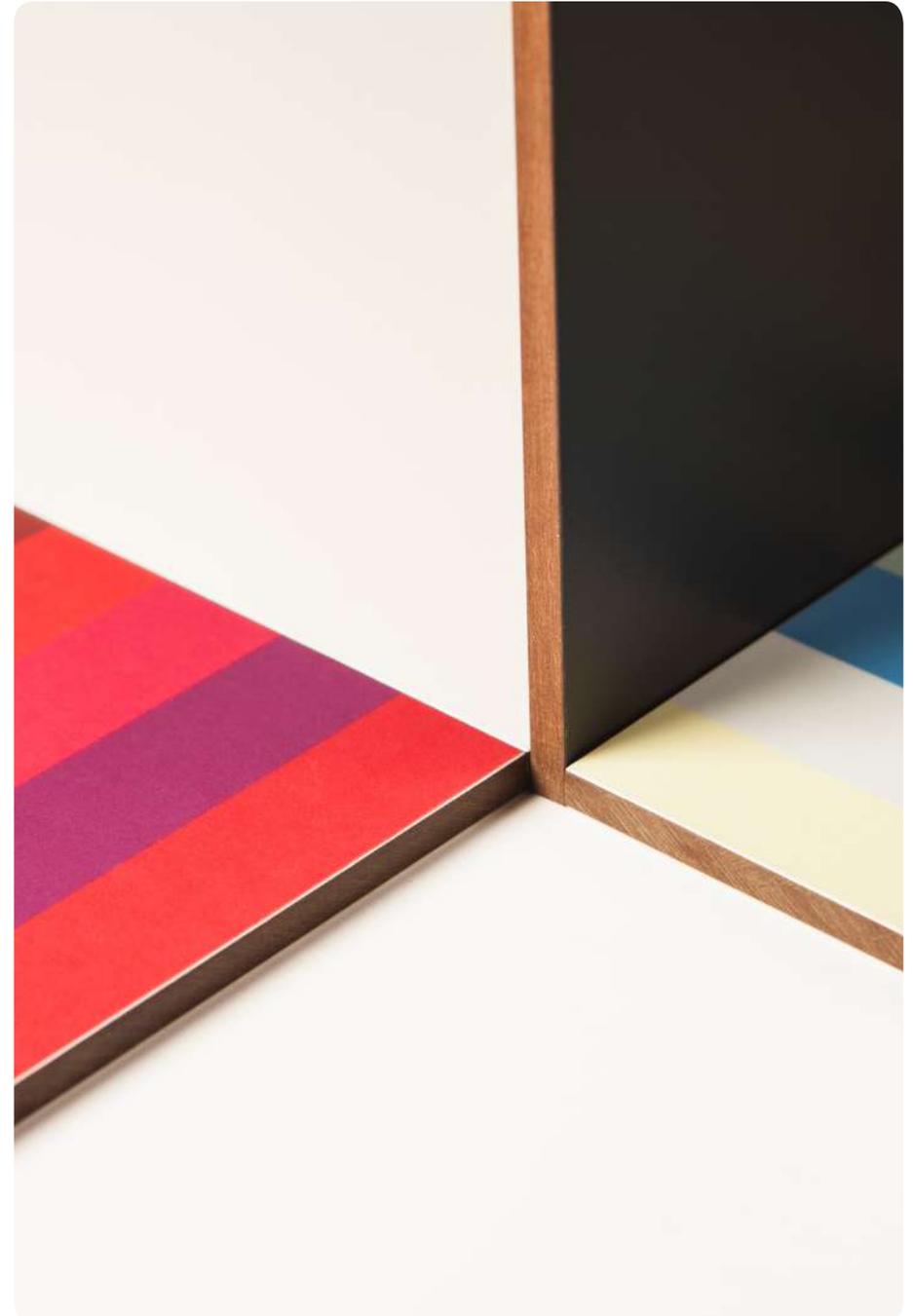
→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

→ Maintenance

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent
2. gently remove dirt
 - if needed, liquid abrasive agents can be used, however it can result in more matt surface
3. dry the surface using clean and soft cloth
4. check the connecting material and fasten it if needed



High pressure laminate – HPL

Notification:

HPL boards are not walkable and it is prohibited to walk or jump onto the boards as it would result in loosen connecting material, deformation and even destruction of the product. HPL board is not intended for cutting of food. If manipulated with HPL street furniture, pay higher attention as the corner could be broken after clash.

Polyethylene (Citépin plugs, cladding, liners)



Polyethylene with low density (LDPE)

LDPE – polyethylene material with low density is used for manufacturing of round ribbed caps called „Citépíns“. The seat equipped with CITÉPIN plugs thermo-regulates a person sitting on the surface and makes the seating more comfortable.

The plugs are supplied with shiny surface in white, light grey, dark grey and black colours or with mat surface in light grey and black colour.

Round CITÉPIN plastic plugs are used for perforated steel seat of Sinus and Radium benches.

Polyethylene with high density (HDPE)

HDPE – polyethylene material with high density is used for several products. HDPE is greatly resistant to chemicals, abrasion, sanitary and enables to use the products at very low temperatures. Products made of HDPE do not suffer from corrosion or oxidation.

HDPE is used for cladding of Cylindre litter bin and liners of Minium and Diagonal litter bin.

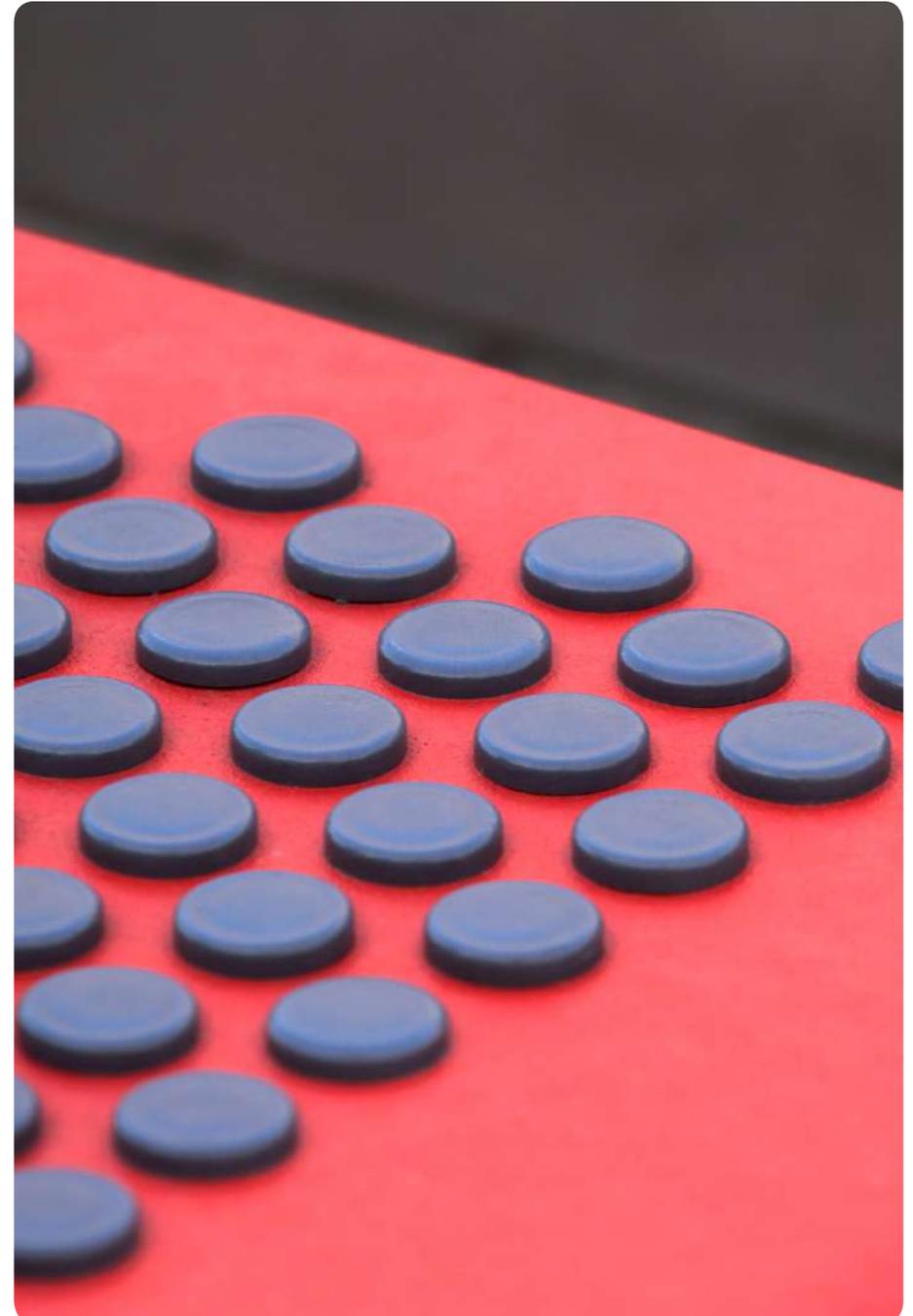
→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

→ Maintenance

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent



Polyethylene (Citépin plugs, cladding, liners)

mmcite.com

2. gently remove dirt
3. dry the surface using clean and soft cloth
4. check the connecting material and fasten it if needed

EPDM Rubber



Profiles and boards made of EPDM rubber function as sealing of compact rubber on the basis of Ethylene-Propylene-Dien rubber and inorganic and organic additives (for example filling agents, thickening agents, softening agents and additives against aging.

EPDM does not transmit air or water. It is resistant to weather temperatures in the range from -40°C to $+100^{\circ}\text{C}$ without the change of physical, mechanical and chemical properties. For a short term, it resists temperatures up to $+130^{\circ}\text{C}$ however the early aging and change of properties have to be taken into account EPDM is produced at the hardness level of $70\pm 5^{\circ}\text{ShA}$. The surface of sealing is smooth and black.

EPDM profiles and boards are suitable as sealing of constructional and structural elements thanks to the mechanical, physical and chemical properties and possible permanent deformation, used in various industry fields such as sealing for automotive industry.

Lifespan of rubber profiles and boards is 50 years in common Middle-European climate conditions.

→ Control

Instructions for control to be carried out on regular basis and common maintenance steps are set in the appendix no. 1

→ Maintenance

If rubber gets in touch with colours or oils, the dry cloth has to be used immediately. Rubber products are not permitted to be packed into foils made of softened polyvinyl- chloride.

Obligatory maintenance procedure:

1. clean the surface with water and mild detergent



2. clean the surface using solution of alcohol and glycerin (10:1)
 - petrol, benzene, turpentine, tri-chloride, petroleum etc. cannot be used for cleaning
3. dry the surface using clean and soft cloth
 - it is not permitted to dry rubber product by direct exposure to radiant heat

Lifespan of products made of rubber can be prolonged by using glycerin or other agents for rubber maintenance.

Notification:

All products containing rubber parts have to be stored, treated and maintained according to the manufacturer's instructions, given upon request, according to ČSN 63001:1971 standard of „Rubber products – Storage and treatment of rubber and products made of rubber“, and DIN 7716:1982 „Rubber products: requirements on storage, cleaning and maintenance, paragraph 3.

Cushions



A set of waterproof cushions is available as an accessory to the STACK range with steel grids. The inside of seat cushions is filled with Dryfeel exterior foam, which absorbs less humidity and thanks to its extremely porous cellular structure dries much faster than regular foam fillers. The seat is covered with a water-resistant exterior fabric that is pleasant in contact and provides high seating comfort. The fabric is resistant to ordinary soiling, it is washable and cleanable with a bleach solution.

→ Maintenance

In order to maintain the technical and visual parameters of seat cushion, it should be regularly maintained with a clean, damp cloth, or occasionally washed at 40°C.

→ Stains removal

Stains must be removed as soon as they occur.

Remove any dirt left.

Clean the affected area with a clean cloth moistened with a solution of mild soap and water.

Gently rinse with clean water and allow to dry naturally.

→ Bleach cleaning (to remove mildew, odors and resistant stains)

Prepare a solution of 80% water and 20% household bleach.

Clean the affected area with a clean cloth moistened with a solution of water and bleach.

Rinse thoroughly with clean water and allow to dry naturally.



→ **Washing**

Wash the cover at 40°C using a „gentle“ cycle and minimum speed. Do not overfill the washing machine. Allow to dry naturally without using ironing.

→ **Storing**

In order to ensure the longest possible lifespan of cushions, it is recommended to store them or eventually provide them with a protective cover for long periods of non-use, out of season or extreme conditions. Make sure the cushion is clean and dry before storing. Avoid storing it in a humid environment.



Street furniture elements such as litter bins, bollards or ashtrays consist also of movable mechanisms and locks. The control and maintenance on regular basis is crucial, the recommended interval is each 3 months. Regarding the fountains, during the winter period if ambient temperature goes below +5°C, water has to be let out and the valve closed. In case of vandalism (for instance aggradation of water outflow around nozzle or if bowl and nozzle are damaged), it is needed to replace the set of bowl and nozzle.

Due to the proper sealing function, this set is demountable.

In case of movable bollards, it is necessary to treat parts, which are inserted into each other, with Vaseline or an agent on the same basis to prevent frosting.

Maintenance:

The maintenance is crucial mainly before and during the winter period! In winter, the maintenance interval is shorter– it should be carried out as needed (due to weather changes).

Regular maintenance of locks and mechanisms

Maintenance interval of 3 months

1. Clean the locks from dirt and dust – it is recommended to use cloth or a small brush
2. Check the lock works properly
3. Apply a mixture based on oils for lubrication of locks and the mechanisms
4. Lock and unlock it several times in order to get the oil into the whole mechanism.

If damage on the mechanism is found out, the manufacturer will supply a new one according to customer's requirements and the order; eventually the manufacturer will exchange the mechanism as well.

Connecting material

mmcite.com



Stainless steel A2 grade connecting material is used for the installation of wooden parts to steel structure.

It is needed to check the connection material once each six months. If the connecting material has loosened up, it has to be fastened in order to prevent the damage of the product.

Foundation

If the foundation for anchoring of street furniture is visible, it is needed to visually check the compactness, mechanical damage or cracks in concrete.

Instructions for regular control

In order to persevere the aesthetics and functionality and to avoid early devaluation of the product, regular and careful control and maintenance is needed. Common and recommended interval for regular control and maintenance is once six months.

The user / owner is obliged to keep the records about the controls and maintenance (original status of products, actions carried out, current status of the products), including electronic documentation.

If any damage occurs, the immediate reparation has to be carried out in accordance with the manufacturer's instructions or to contact the manufacturer to supply the maintenance.

Maintenance and reparation of smaller scale

It is prohibited to use chemical dissolving agents (trichlorethylene, acetone, petrol etc.) on the wooden and metal parts. In some cases, namely stainless steel parts, even the detergents based on acetone or petrol cannot be used.

If detergents intended for basin cleaning are used, the cleaned spots have to be further neutralized with soap water and then clean water. It is prohibited to use sharp tools (such as knife, spatula, spring mattress, and others as well as abrasive detergents based on sand as due to the risk of scratches and damage.

→ Structures



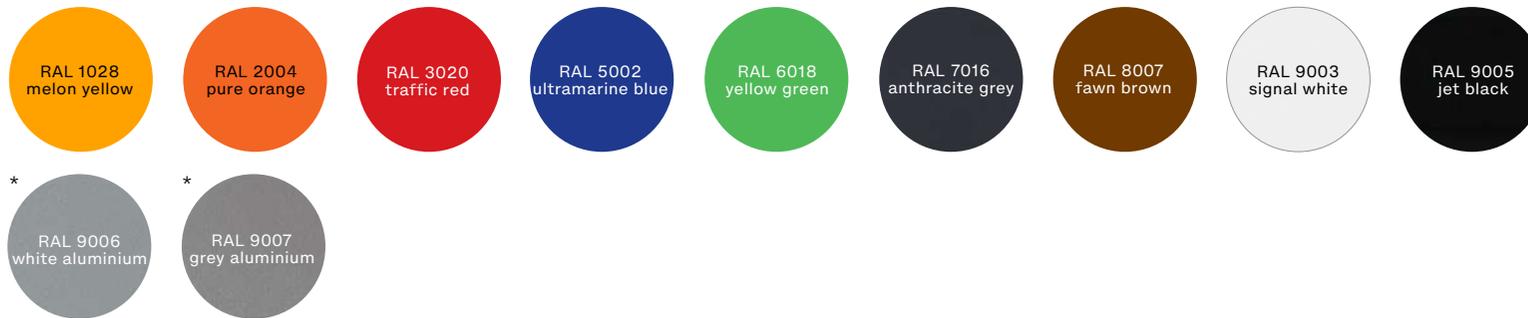
→ Powdercoat colours



* metallic colours (RAL 9006, RAL 9007, DB 703)

Displayed shades may vary from the reality. For exact colors please contact mmcité sales representative. The above displayed colours of materials are of illustrative character. Kindly always use the sampler of standard colours and materials used by mmcité.

→ Screen printing colours



→ Two-tone powder coat combinations



* **metallic colours** (RAL 9006, RAL 9007, DB 703)

Displayed shades may vary from the reality. For exact colors please contact mmcité sales representative. The above displayed colours of materials are of illustrative character. Kindly always use the sampler of standard colours and materials used by mmcité.

Two-tone powdercoat combinations

mmcite.com

RAL9007 + RAL2004

RAL8019 + RAL5015

RAL7016 + RAL1021



RAL9005 + RAL1013

RAL9006 + RAL6027

RAL7022 + RAL6018

→ Standard wood



→ Plywoods



→ Composites



→ Citépins



More HPL patterns and colours upon request

Displayed shades may vary from the reality. For exact colors please contact mmcité sales representative. The above displayed colours of materials are of illustrative character. Kindly always use the sampler of standard colours and materials used by mmcité.

→ **Standard colour shades of cushions**



Warranty conditions for city street furniture products

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The provisions of legal regulations apply to warranties and the method of enforcing warranty rights. The warranty applies to all city street furniture products manufactured by mmcite a.s. subject to the condition that the handling, assembly, storage, use and maintenance of each type of street furniture was carried out in accordance with legal regulations and the manufacturer's instructions.

The warranty does not apply to defects caused by unprofessional handling or storage, mechanical damage, vandalism or natural wear and tear; to defects caused by natural disasters or other external weather effects and the warranty also does not apply to specific material properties, such as the formation of cracks or washing out of the internal material from the used wood.

The warranty does not apply to damage caused by:

- improper use or storage
- mechanical damage
- vandalism
- natural wear and tear
- natural disasters or other external climatic effects
- specific characteristics of the materials, e.g. the appearance of surface cracks or warping in the wood.

Customer needs to keep records about the prescribed maintenance and submit these when processing warranty claims.

*

1. For locations, where the environment is established as C4 or lower (according to EN ISO 12944-5)

a. 72 months warranty for steel structure treated with zinc and one-layer powder coating (against rusting-through)

2. For locations, where the environment is established as C5 (according to EN ISO 12944-5)

a. 24 months warranty for steel structure treated with zinc and one-layer powder coating (against rusting-through)

b. 72 months warranty for steel structure treated with zinc and two-layer powder coating (against rusting-through)

Exterior environments		
Environment category	Corrosion risk	Typical steelwork location.
C3	medium	Most rural and urban areas with low sulphur dioxide, acid, alkali and salt pollution.
C4	high	Urban and industrial atmospheres with moderate sulphur dioxide pollution and / or coastal areas with low salinity.
C5	very high	Industrial areas with high humidity and aggressive atmospheres.
		Coastal and offshore areas with high salinity.

Regular maintenance has to be carried out according to manufacturer's instructions and the records of maintenance including pictures have to be forwarded when claimed.

In addition to the basic warranty period, mmcité provides the following extended warranties:

1. Steel structure treated with zinc coating and one-layer powder coating (installed in C4 or lower environment category)*	72 months	against rusting-through
2. Steel structure treated with zinc coating and one-layer powder coating (installed in C5 environment category)*	24 months	against rusting-through
3. Steel structure treated with zinc coating and two-layer powder coating (installed in C5 environment category)*	72 months	against rusting-through
4. Aluminium without surface treatment	72 months	against rusting-through
5. Aluminium with powder coating or anodised	120 months	against rusting-through
6. Stainless steel	120 months	against rusting-through
7. Jatoba wood	120 months	against fungus, rotting and mold
8. Robinia	60 months	against fungus, rotting and mold
9. Thermo-ash, thermo-pine	24 months	against fungus, rotting and mold
10. Spruce, plywood and Multiplex birch multi-layer plywood	24 months	against fungus, rotting and mold
11. Resysta material	60 months	against fungus, rotting and mold, for persevered strength and flexibility
12. HPL material	24 months	for persevered strength and flexibility
13. Self-compacting concrete	48 months	for persevered strength, without crumbling
14. High-strength concrete and ultra-high-strength concrete	48 months	for persevered strength, without crumbling
15. Safety glass	60 months	for dimension and colour stability
16. Stainless steel connecting material	24 months	against rusting-through
17. Mechanisms, locks, sealing, gas spring	12 months	
18. Electro-components	12 months	
19. Sandwich panel	12 months	
20. EPDM rubber	24 months	
21. Cushions	24 months	
22. Photovoltaic panels warranty	60 months	
23. MPPT solar charge controller warranty	36 months	
24. Batteries	24 months	

Packing:

Before leaving the factory each product of mmcité is packed, for its protection during transportation, into shrink-wrap, carton, corrugated or solid cardboard, eventually we use the above mentioned in combination with foam filling or bubble wrap. The glass panels are placed on a separate wooden or steel stands.

Thus wrapped groups of products are placed onto wooden pallets or into cardboard boxes, wooden boxes or wooden reinforced frames.

For sea freight and air freight and in case of a customer's request we use certified fumigated boxes in accordance with ISPM Pub. No.15.

All packages are equipped with the necessary instructional symbols according to CSN EN ISO 780 for handling, transportation and storage of the product.

→ Transportation and handling:

During handling the packaging must not be exposed to excessive stress, which could result in damage to the packaging or a product.

Packed products have to be transported only in covered vehicles and must be secured against shifting or falling.

Type of packaging ensures that the product is delivered to the customer in perfect condition and is clean and undamaged for follow-up installation. Unless otherwise stated, the pallets are NOT STACKABLE.

Recipient of the supply is obliged to ensure its proper unloading. The transporter is obliged to hand over the goods in undamaged packaging.

The recipient must inspect the shipment upon receiving it and immediately give notification of any externally observed damage. Moreover, the recipient has to give a notification by describing the nature of the damage to delivery note in participation of the transporter and photographically document it.

After unpacking, the recipient checks whether the specification on the delivery note corresponds to the products specification on the order, whether products correspond to the ordered requirements and whether the product is not physically or otherwise damaged.

For safe unloading of packed product or its parts it is necessary to use appropriate mechanisms:

- unloading by hand
- unloading using a pallet jack with appropriate load-bearing capabilities for the weight of the package
- unloading using a forklift with appropriate load-bearing capabilities for

the weight of the package

- unloading by crane - only for specifically designated goods

Storage:

The packaging is exclusively designed to protect the goods during the transportation. Even for temporary storage prior to installation, it is always necessary to remove product from the shrink-wrap. This will prevent condensation of air moisture inside the package and a possible damage to the surface of products.

Products must be installed immediately or stored in a dry ventilated area, eventually stored outdoors covered with a tarpaulin so that they are protected against dust, while ensuring adequate airing.

Before the next dispatch of products that are stored according to the previous guidelines, it is necessary to check the stored products visually, to pack them appropriately to the original form of packaging so that the product is protected against mechanical and weather damage. Necessary instruction symbols must be placed again on the package.

Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer bears no responsibility. The packaging material is a part of the product and it is a property of the buyer; for its disposal it is recommended to use the services of recycling companies.

1. Failure to comply with the above mentioned conditions may lead to damage to the product for which the manufacturer bears no responsibility.
2. The furniture installation at the place of destination have to be realised according to the manufacturer's specification and the corresponding documents, find more at www.mmcite.com
3. If you have any further questions, please contact your responsible distributor.

All contact details can be found at www.mmcite.com

1. Insert 9 mm triangle key
 2. Turn key
 3. Pull front cover forward
 4. Pull out ashtray and empty into inner container
 5. Remove the inner upwards in oblique direction
- After emptying, insert the container back and close door.**

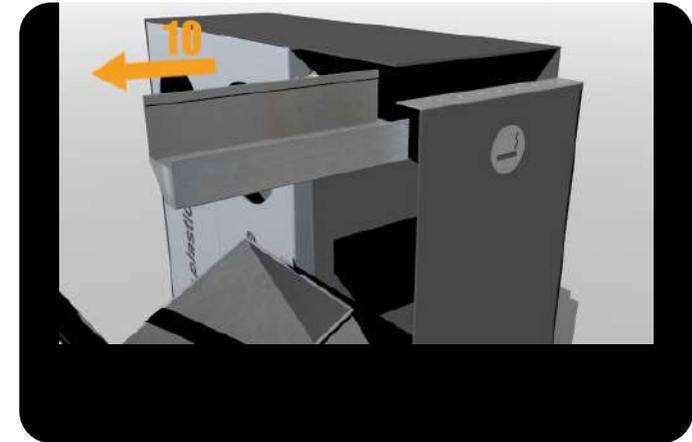


1. Insert 9 mm triangle key
2. Turn key
3. Pull front cover forward, place dog excrement bags
4. Remove inner container aslant up and replace the bags
5. After replacing, insert the inner container back and close the door

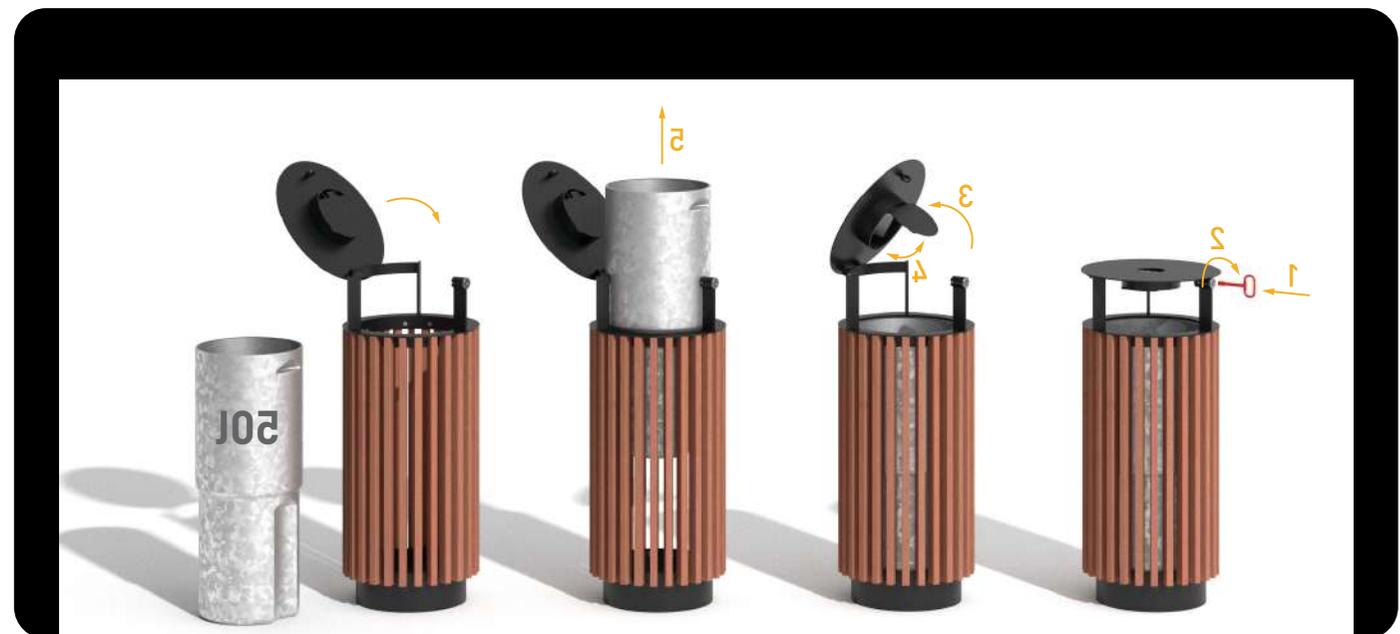


1. Insert 9 mm triangle key
2. Turn key
3. Pull first front cover forward
4. Insert triangle key
5. Turn key
6. Pull second front cover forward
7. Insert triangle key
8. Turn key
9. Pull third front cover forward
10. Pull out ashtray and empty into inner container
11. Remove inner containers aslant up

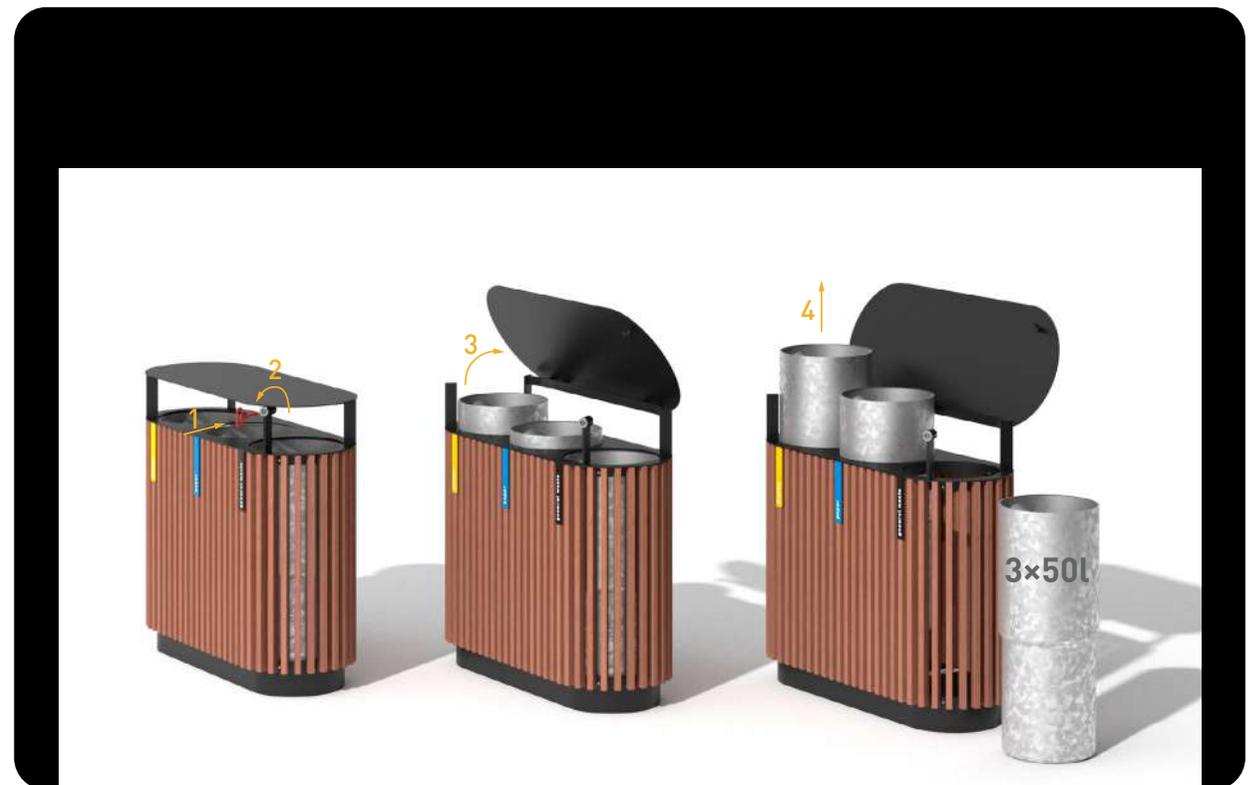
After emptying, insert the containers back and close door.



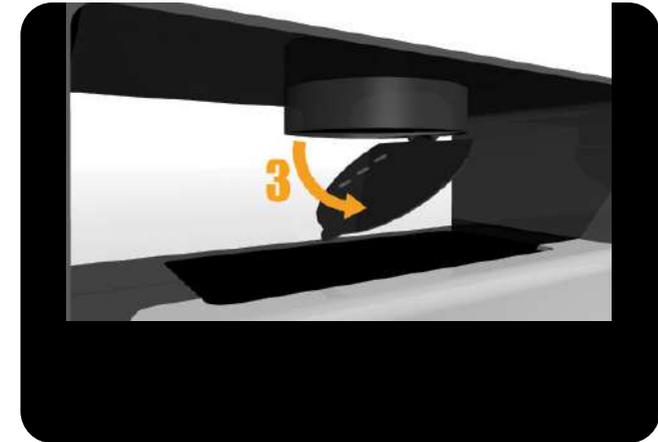
1. Insert 9 mm triangle key
 2. Turn key
 3. Lift the bin cover
 4. Empty the ashtray by tilting the bottom,
Which returns to its initial position via a returnable
spring
 5. Remove the inner container by pulling upward
- After emptying, insert the inner container back and close
the top cover.**



1. Insert 9 mm triangle key
 2. Turn key
 3. Lift the bin cover
 4. Remove the inner containers by pulling upward
- After emptying, insert the inner containers back and close the top cover.**



1. Insert 9 mm triangle key
 2. Turn key
 3. Empty the ashtray by tilting the bottom, which returns to its initial position via a returnable spring
 4. Lift the front door
 5. Remove the inner container by pulling aslant up
- After emptying, insert the container back and close door.**



1. Insert 9 mm triangle key
 2. Turn key
 3. Open front door forward
 4. Remove inner container forward
- After emptying, insert the container back and close door.**



1. Insert the 9 mm triangle key
2. Turn the key
3. Empty the ashtray by tilting the bottom, which returns to its initial position via a returnable spring
4. → 5. Pull the cover up and fold it aside
6. Remove the inner bin by pulling upward
- After emptying insert the inner bin back**
7. → 8. Put the cover back to the initial position



1. Insert the 9 mm triangle key
2. Turn the key
3. → 4. Pull the cover up and fold it aside
5. Tip out the frame for plastic bag, remove the full bag and replace it with the new one

Bring the frame with plastic bag back into the original position

6. → 7. Put the cover back to the initial position



1. Insert the 9 mm triangle key
2. Turn the key
3. Open front door forward
4. Remove inner container forward

After emptying, insert the container back and close door.

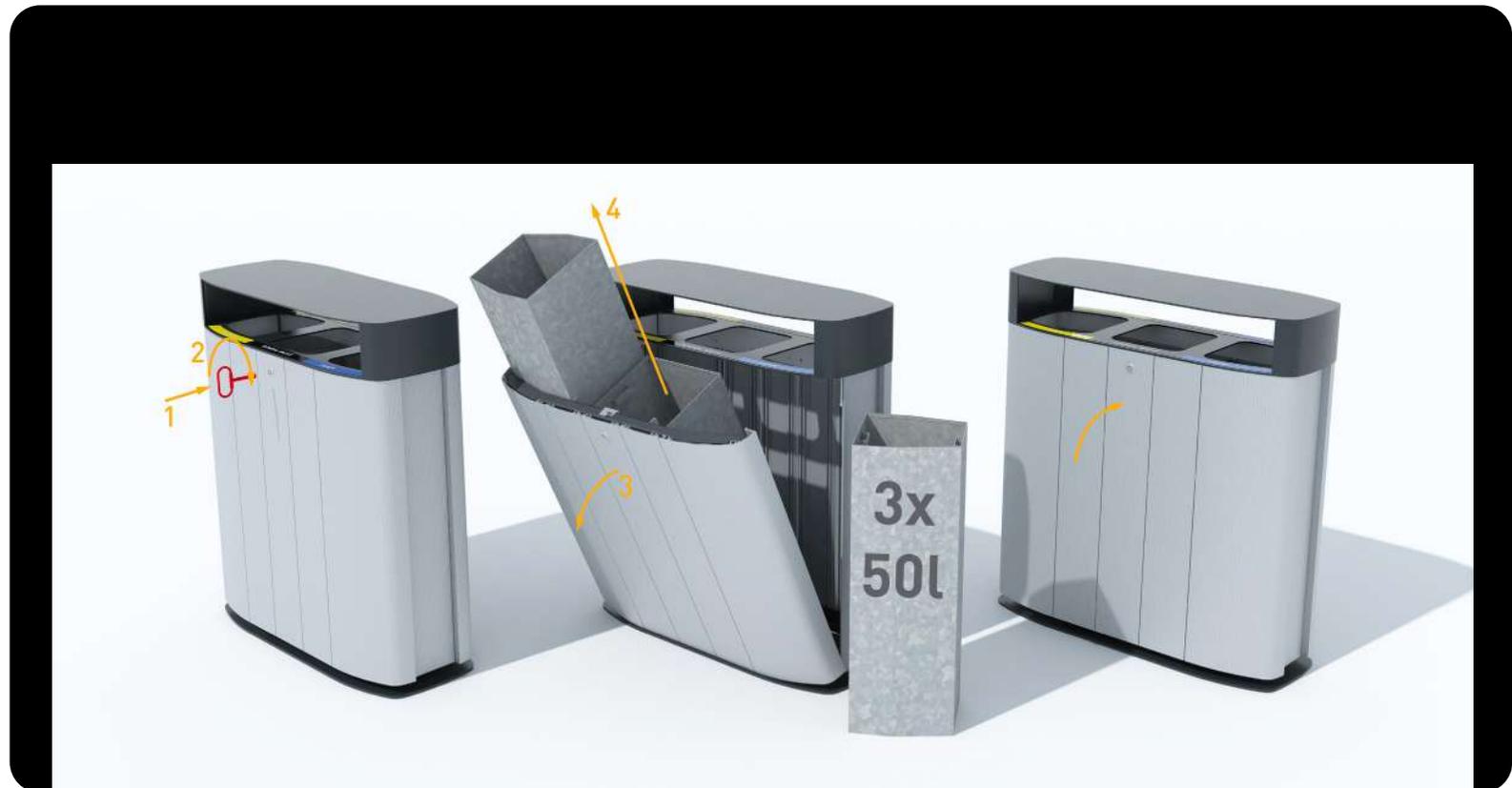


1. Insert 9 mm triangle key
2. Turn key
3. Open front door forward
4. Tip out the frame for plastic bag, remove the full bag and replace it with the new one
5. Bring the frame with plastic bag back into the original position

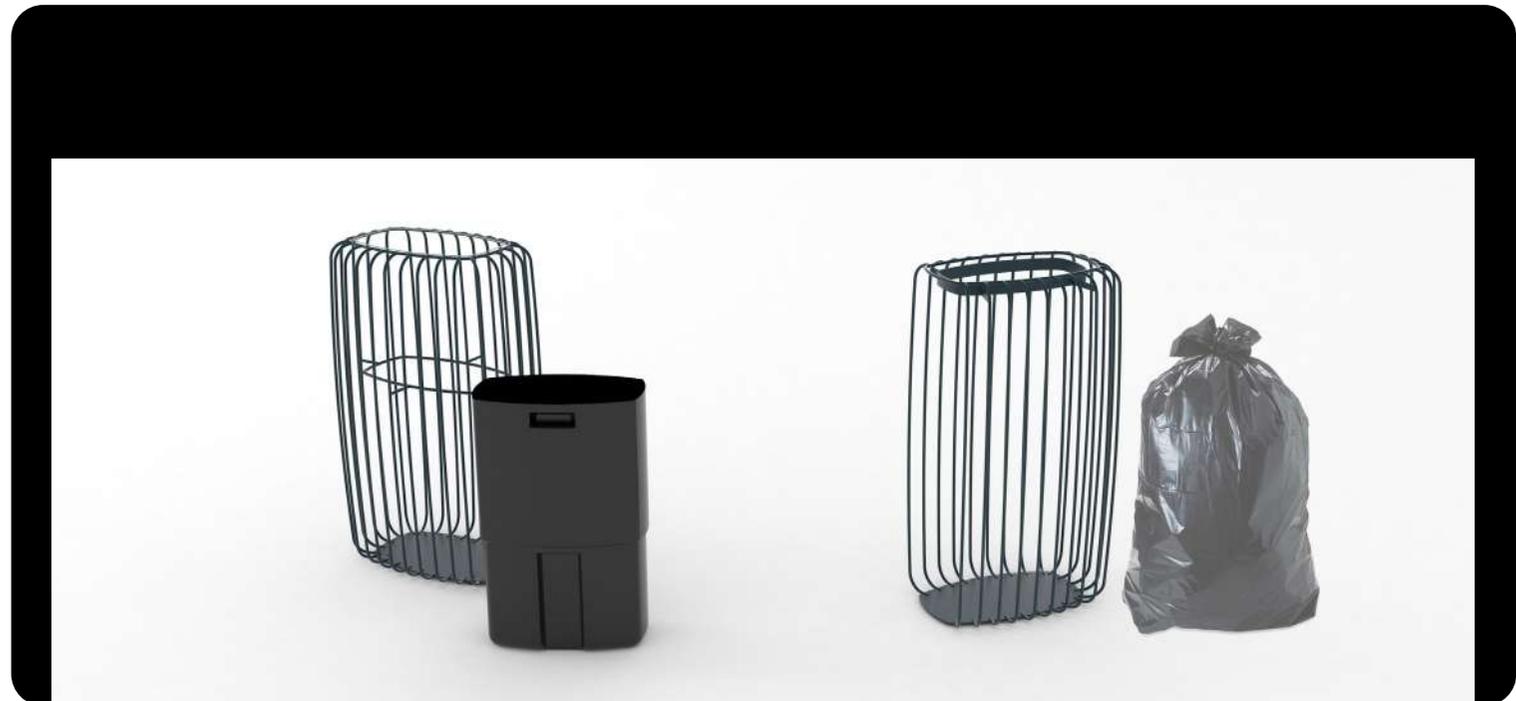


1. Insert 9 mm triangle key
2. Turn key
3. Pull front cover forward
4. Remove inner container aslant up

After emptying, insert the container back and close door.



The inner container is emptied without using tools.
Plastic bag is secured with rubber fuse which is an integral part of the litter bin.



Better

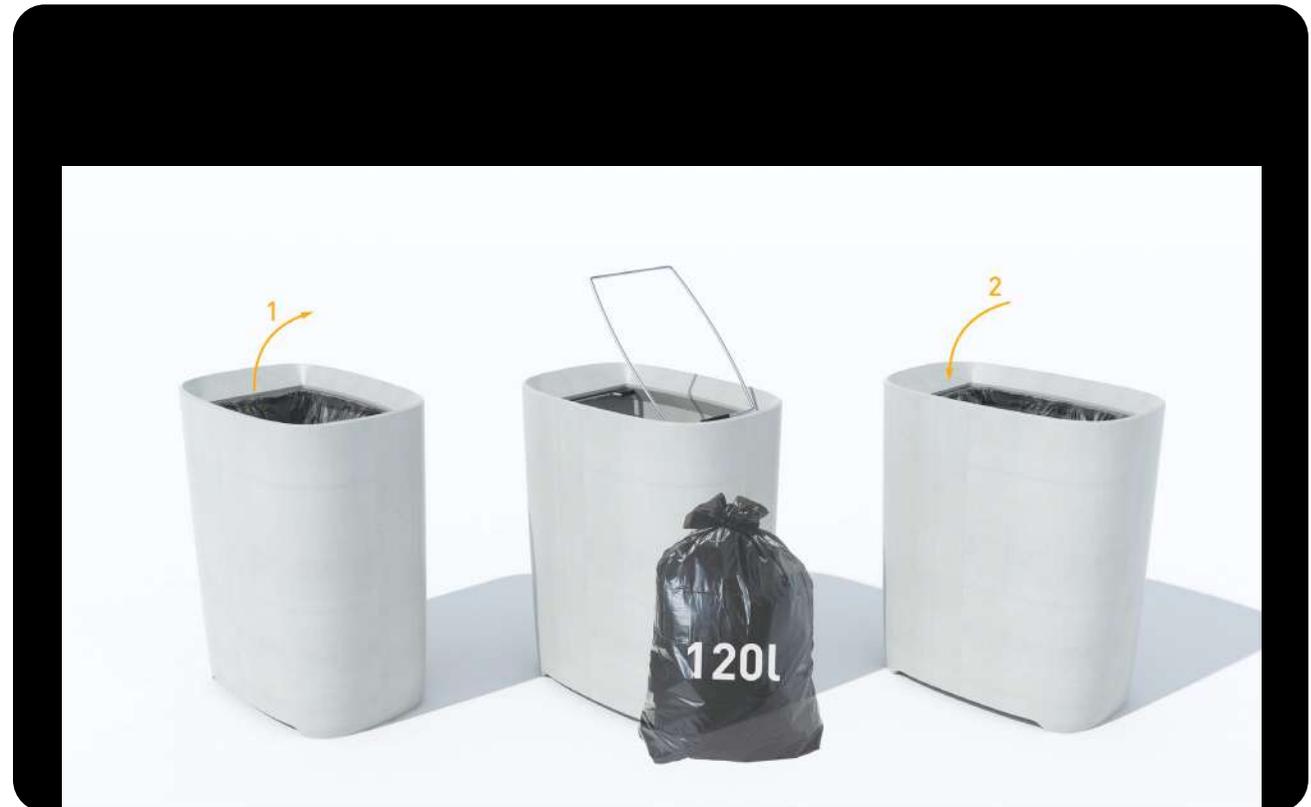
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The inner container is emptied without using tools.



The inner container is emptied without using tools.

1. Tip out the frame for plastic bag, remove the full bag and replace it with the new one
2. Bring the frame with plastic bag back into the original position



1. Insert 9 mm triangle key
2. Turn the key
3. Empty the ashtray by tilting the bottom
4. Lift the bin cover
5. Tip out the frame for plastic bag, remove the full bag and replace it with the new one

Bring the frame with plastic bag back into the original position.

Put the cover back to the initial position.



1. Insert 9 mm triangle key
 2. Turn the key
 3. Empty the ashtray by tilting the bottom
 4. Lift the bin cover
 5. Remove the inner container by pulling upward
- After emptying, insert the inner container back.**
Put the cover back to the initial position.



1. Insert 9 mm triangle key
 2. Turn key
 3. Variant with ashtray – ashtray to be emptied by tilting the bottom, which returns to its original position with spring return. Then fold the top cover
 4. Remove the inner container by pulling upward
- After emptying, insert the container back and close the top cover.**



1. Insert 9 mm triangle key
2. Turn key
3. Open front door forward
4. Remove inner container forward
5. After emptying, insert the container back and close door.

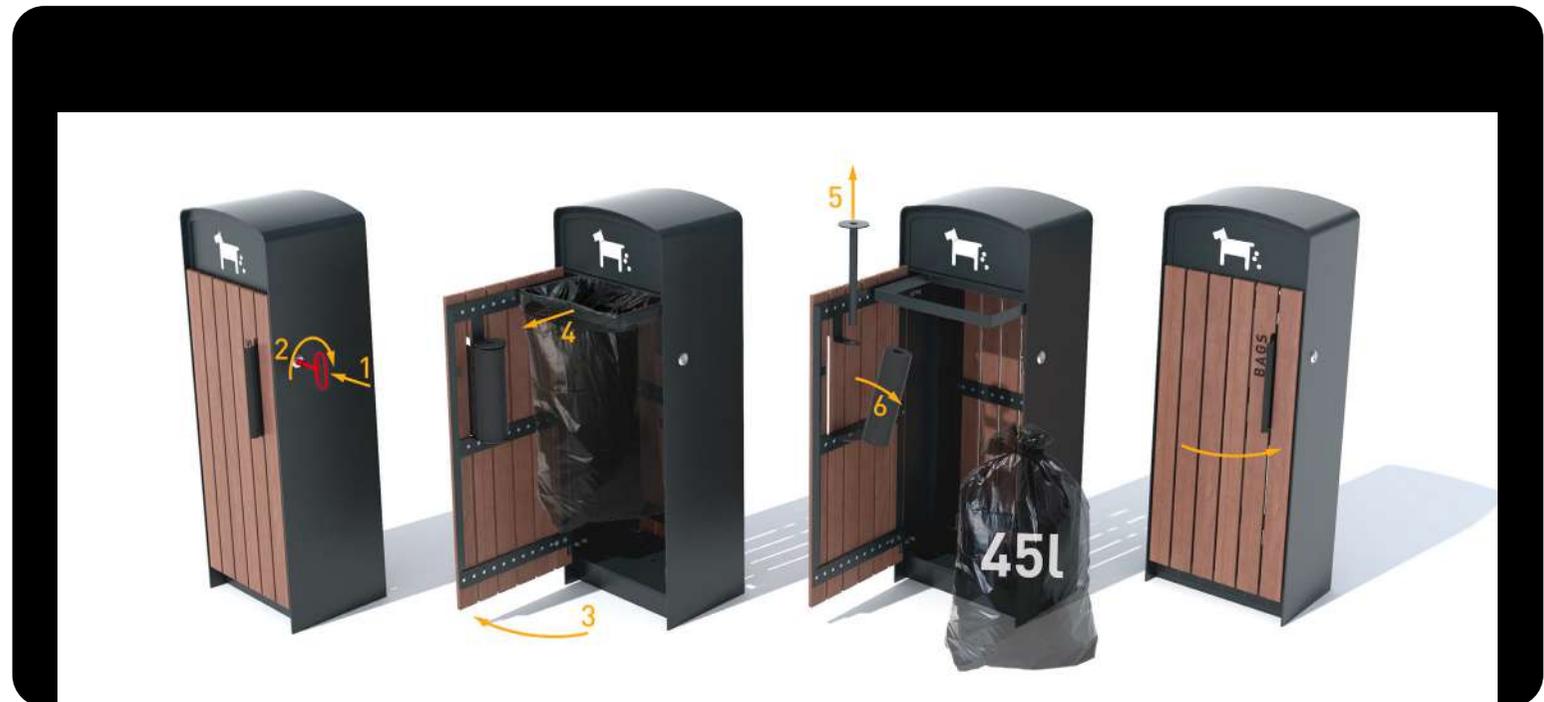


- For dog excrements

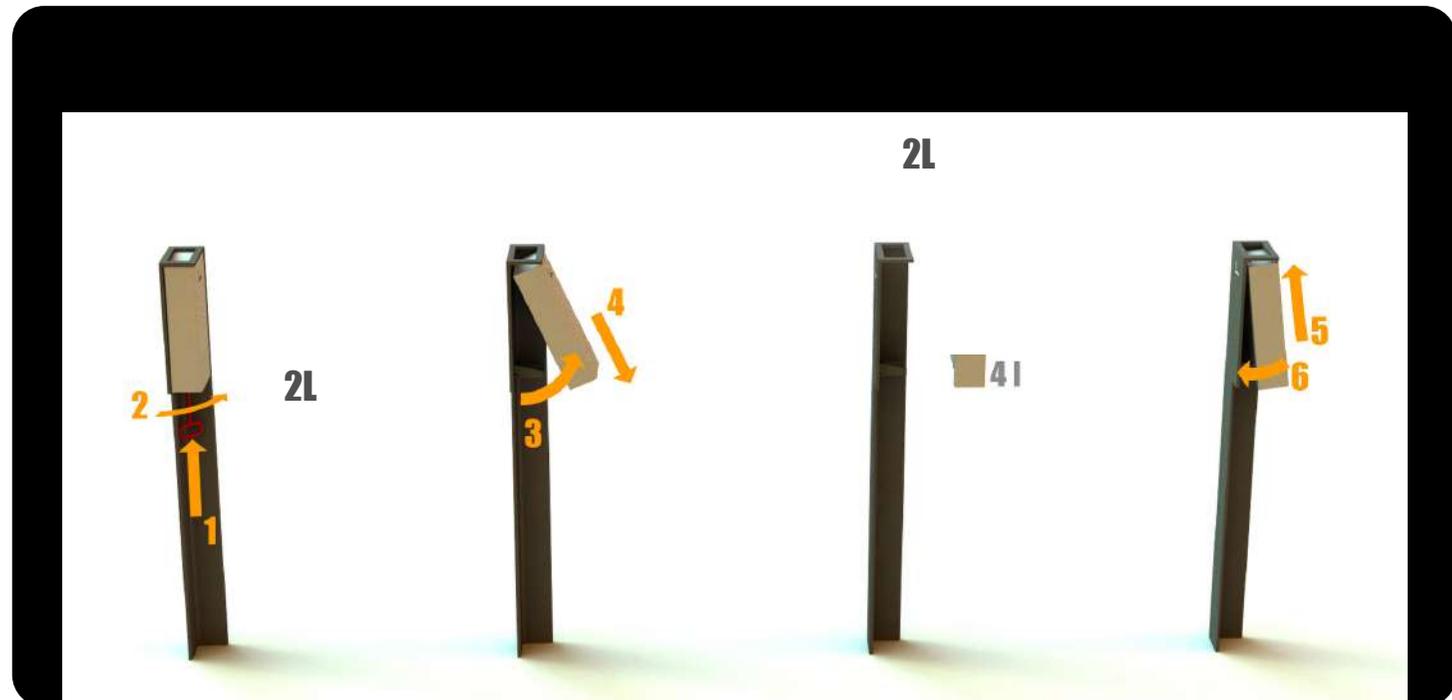
1. Insert 9 mm triangle key
2. Turn key
3. Open front door forward
4. Eject the frame for plastic bag, remove the full bag and replace it with the new one

Bring the frame with plastic bag back into the original position

5. → 6. Refill bags for dog excrement



1. Insert 9 mm triangle key
2. Turn key
3. While holding the container, remove it to the side
4. Remove the container and empty it
5. Insert the top of the container from the bottom onto the stainless steel extinguisher
6. Close the ashtray without using a key



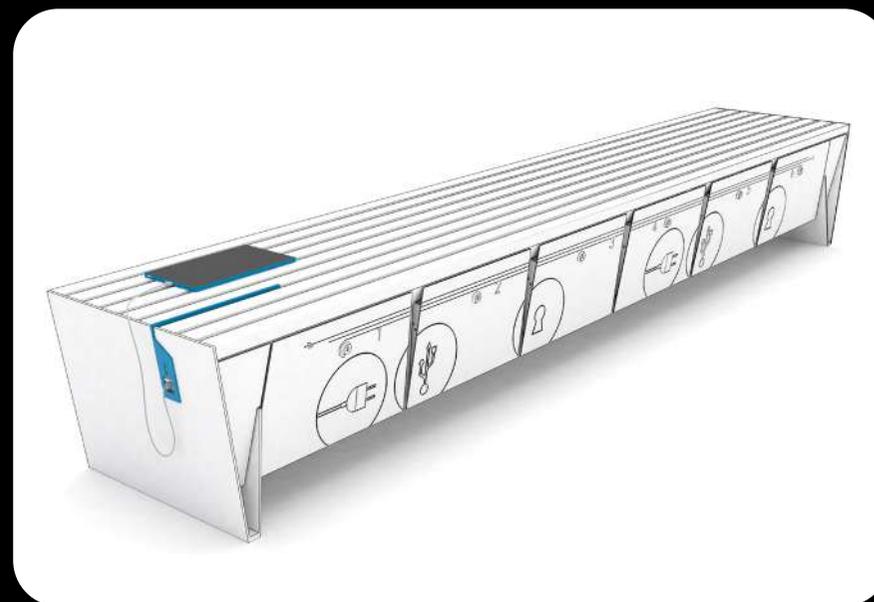
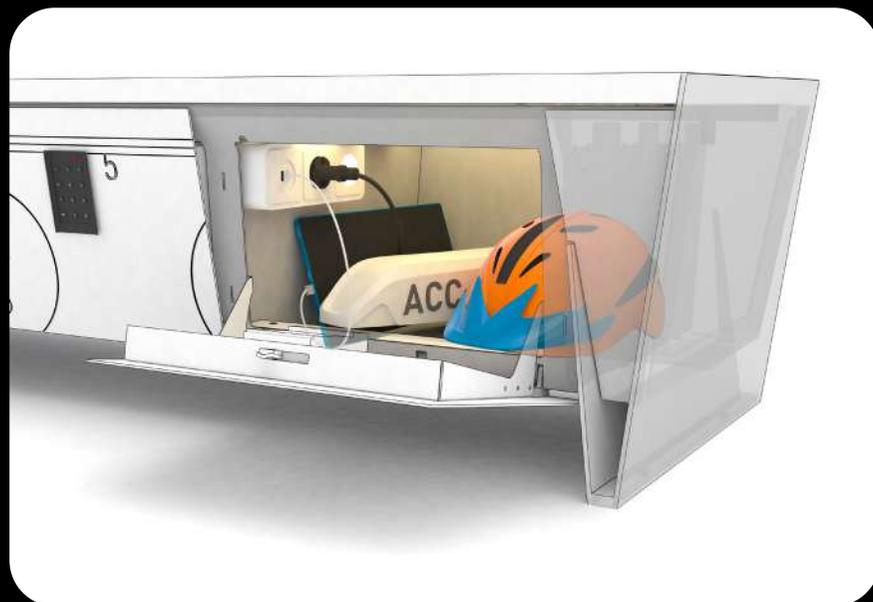
1. Insert special key
2. Turn key
3. Pull the bollard upward
 - If the bollard is not used, the gap in the anchoring part can be covered (cover not included with bollard)
4. Insert bollard to original position



1. Insert special key
2. Turn key
3. Pull the bollard upward
 - If the bollard is not used, the gap in the anchoring part can be covered (cover not included with bollard)
4. Insert bollard to original position

The removable bollards LOT and DONAT use same system of removing as ELIAS.

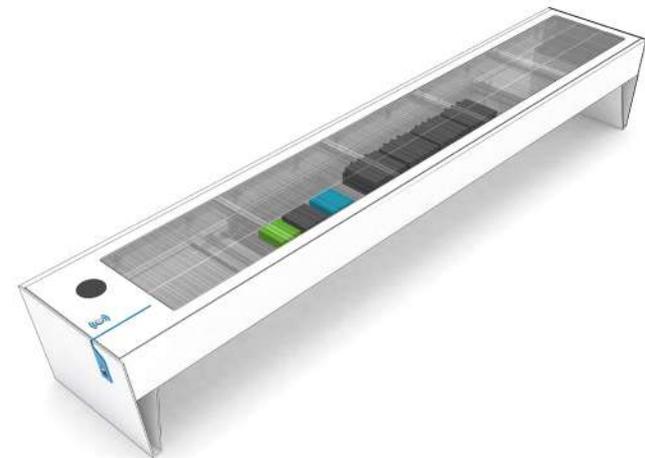
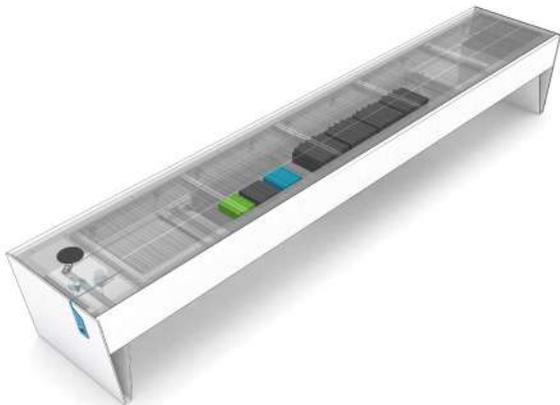
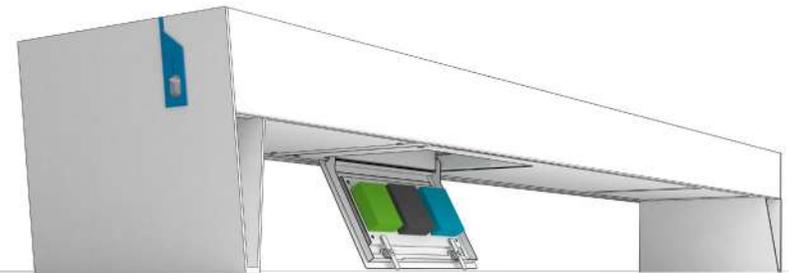




Woody Scorpio

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		WDS180		WDS110	LQS110
		woody solar		woody scorpio	blocq solar
system voltage		12 V		12 V	12 V
photovoltaic panels	total performance	350 Wp		175 Wp	150 Wp
	type	polycrystal		polycrystal	monocrystal
	tilt of the roof	18°		22°	0°
battery	total capacity	80 Ah		80 Ah	80 Ah
	type of the battery	LiFePO4		LiFePO4	LiFePO4
wifi hot spot	connection type		4G (LTE) – Cat 4 DL, UL ; DC-HSPA+; UMTS; TD-SCDMA; EDGE; GPRS	4G (LTE) – Cat 4 DL, UL ; DC-HSPA+; UMTS; TD-SCDMA; EDGE; GPRS	4G (LTE) – Cat 4 DL, UL ; DC-HSPA+; UMTS; TD-SCDMA; EDGE; GPRS
	max. connection speed	4G (LTE)	150 Mbps	150 Mbps	150 Mbps
		3G	42 Mbps	42 Mbps	42 Mbps
		2G	236,8 kbps	236,8 kbps	236,8 kbps
	max. number of users		50		50
	SIM card type		MiniSIM		MiniSIM
range in free space		up to 100 m		up to 100 m	up to 80 m
USB charging module	max. power	7W (5V, 1,4A)		7 W (5V, 1,4A)	7 W (5V, 1,4A)
	standard	USB 2.0		USB 2.0	USB 2.0
	n. of ports	4 pcs		4 pcs	2 pcs
wireless charging pad	power	-		-	5 W (5V, 1A)
	standard	-		-	Qi
	n. of moduls	-		-	1 pcs
max. number of devices being charged		4 pcs		4 pcs	3 pcs
total dimmensions of the bench		820x3160x2090 mm		680x3070x2465 mm	540x2995x440 mm
total weight of the bench		580 kg		457 kg	177 kg

AUREO and PIN shelters can be supplied with a roof with photovoltaic system.

The acquired power can supply the USB charging, lighting and wifi hotspot based on the selected configuration. The photovoltaic cells are placed in the roof glass and offer different outputs depending on the type and size of the shelter. The systems are designed as isolated units, ie. without any electrical connection.

Lighting requires the highest energy consumption and to save the consumption, it is switched on the selected time interval in combination with a decrease of its brightness when people are absent in the shelter area. Individual types of shelters offer different solar panel performance with corresponding battery capacity. For the selected location it is necessary to choose a model considering the required period of operation and expected frequency of use.

→ Photovoltaic panels

Glass panels replacing the roof glasses are used for the shelters.

The output of photovoltaic panels depends on:

- the amount of sunlight in their location
- their angle of inclination and cardinal orientation
- environmental shade during the day

The amount of sunlight is different in each location and is affected by:

- the location's distance from the equator, where the closer to the poles, the less sunlight appears
- the number of sunny days in that location

The cardinal orientation only needs to be considered for bench models with inclined photovoltaic panels, it is not necessary to solve for PIN shelters.

Ideal basic cardinal orientation:

- southwards – in the Northern Hemisphere
- northwards – in the Southern Hemisphere

The shelters can be installed in less ideal orientations, but the loss in power output from the photovoltaic panels must be taken into account. An overview of performance reduction due to panel orientation relative to cardinal points:

→ USB charging modules

The shelters are equipped with a standard mmcité USB charging modules for charging electronic devices.

USB modules do not transfer data, therefore do not pose a security risk.

Each USB module has two USB 2.0 ports.

USB cables are not part of the shelter; users bring their own.

While charging it is possible to use the plugged-in device as normal, the only limit is the cable length.

→ Lighting

The shelters are illuminated by LED lighting with possibility of reducing the light intensity. To reduce power consumption, the lighting is switched by a timer on selected time interval in combination with a motion sensor.

→ Wi-Fi hotspot

The shelters can be fitted with an optional Wi-Fi hotspot providing internet access around the shelter.

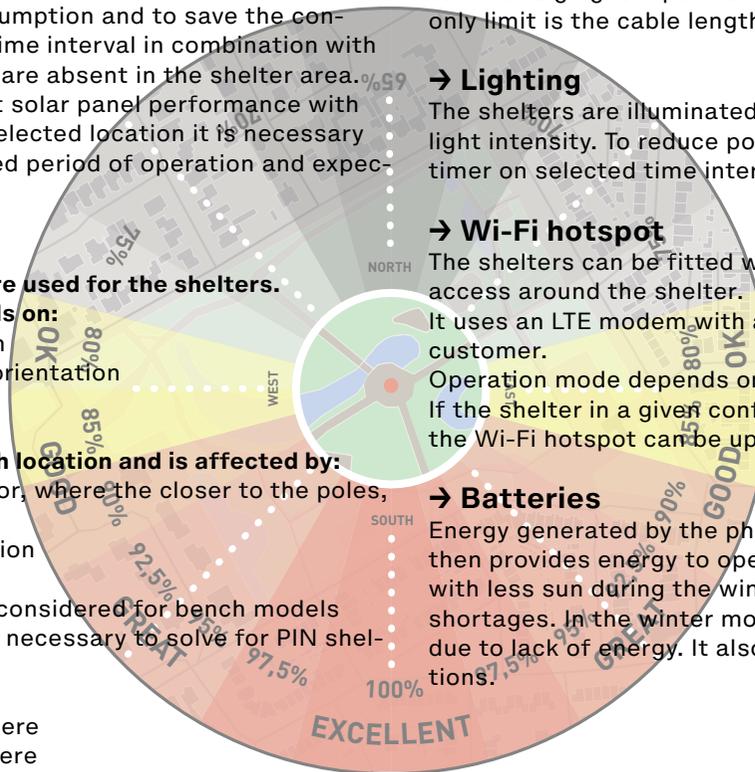
It uses an LTE modem with a SIM card provided and maintained by the customer.

Operation mode depends on the specific configuration and location.

If the shelter in a given configuration and location has a sufficient power, the Wi-Fi hotspot can be up and running continuously.

→ Batteries

Energy generated by the photovoltaic panels is stored in batteries, which then provides energy to operate the entire system. However, in locations with less sun during the winter it is not possible to cover long-term energy shortages. In the winter months this may lead to some system downtime due to lack of energy. It also depends on the frequency of use of all functions.



Shelters with green roof

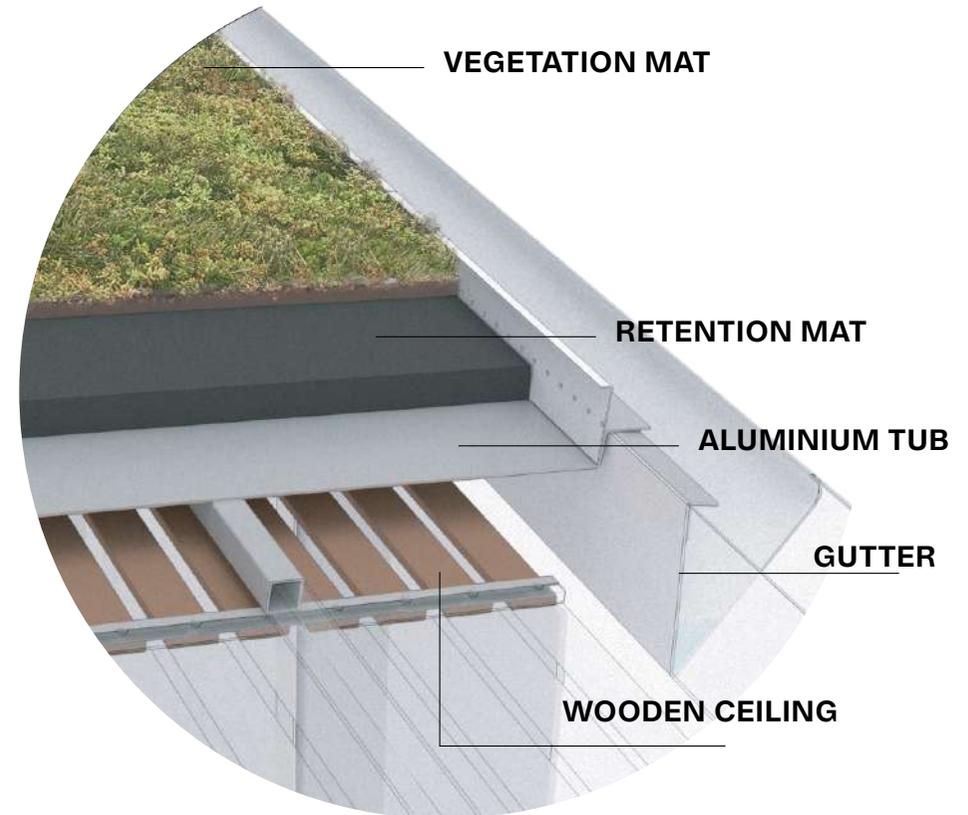
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For the AUREO, GEOMERE, AUREO VELO, EDGE and PIN shelters, another roofing option is also available – green roof.

The green roof consists of a simple layer structure – aluminium tub, retention mat and vegetative layer. For the composition of vegetative layer, we recommend choosing a mix of sedum, which are drought-tolerant succulents that are maintenance-free and can be only irrigated with retained rainwater. The succulents should be fertilized at most once a year. The fully grown sedum carpets can be laid from early spring to late autumn.

Carpets cannot be installed at temperatures 0°C and below and after heavy precipitation. Plants would be frozen or full of water and they could tear while loaded in a garden centre. Due to the different climatic conditions of individual countries, shelters are always delivered without a vegetation layer, which must be supplied by regional dealers.

-  Retention of one third to one half of precipitation. Reduces the risk of sewerage being overloaded.
-  Retention and gradual evaporation of water precipitation contributes to the humidification of surroundings.
-  Cools the space under the shelter.
-  Contributes to reducing the dustiness of surrounding environment.
-  Improves the quality of environment by enriching the air with oxygen.
-  Contributes to the improvement of microclimate in heavily built-up areas with a lack of greenery.
-  Becomes a natural environment for the life of small animals, which is a desirable element of greening of residential areas, especially in the cities.



Street furniture elements must be properly anchored according to the manufacturer's specifications, otherwise the product can overturn if not carefully used. mmcité1 is not liable for any consequences resulting from this type of action.

- All street furniture elements are designed to be firmly anchored to the ground. Kindly see below a few anchoring options for our furniture.
- Anchoring components are supplied based on the customer's request and are not included in the price of the product.
- In general, we recommend anchoring by threaded rods fixed in the concrete foundation using chemical mortar.
- Measurement anchoring allowance is valid for minimum ground bearing capacity of 150 kPa.

Current product spec sheets are available for download on mmcité web page!

1. ANCHORING UNDER THE PAVEMENT

Products anchored below ground level (most street furniture is anchored by a standard 100 mm below the pavement)

- **park benches** – pixel, vltau, helene, vera solo, bistrot, intervera, landscape, emau solo (type with the base frame, which is used when installing curved benches in Bílovice)
- **litter bins** – nanuk, lena
- **ashtrays** – valet
- **bollards** – donat, elias, mielon, isac, lot
- **bicycle stands** – meandre, bikepark, edgetyre, lotlimit
- **railings** – lotlimit, cydlimit
- **tree grids** – arbottura, sinus
- **fountains** – hydro
- **information medium** – C-light IF, C-light, PP, egero, os
- **tables** – tably, vera solo

2. ANCHORING TO THE PAVEMENT

Products anchored to the ground (eg. on the pavement)

Non removable

threaded rods are firmly connected with the product and together with it is anchored with chemical mortar into pre-drilled holes.

- **park benches** – miela, preva urbana, radium, reforma, limpido, sinus, rautster, woody, blocq, rivage, landscape, orbit, emau (has an anchoring system as removable products, but in case of removing curved version benches there is a danger of damage)
- **tables** – blocq, vera
- **bike racks** – elk

Removable – with nut

threaded rods are anchored with chemical mortar into the solid surface (concrete + paving) and products are attached to them using nuts

- **park benches** – vera, miela, portiqoa, block, pixel, stack, rautster, landscape, landscape compact, woody scorpio, woody solar, emau, port, vera solo, satellite, urban islands (includes adjustable feet that help to compensate for an uneven ground.)
- **litter bins** – swissbin, quinbin, aeroporto, prax, cylindre, crystal, radium, minium, multiminium, maximinium, tlesk, better

- **bollards** – donat, elias, mielon, lot
- **bicycle stands** – velo, gomez, elk
- **planters** – florium, malageno

Removable - with bolt

threaded rods are fixed to the product by bolts and afterwards they are anchored with chemical mortar together with the product into the pre drilled holes in the solid surface (concrete + paving)

- **park benches** – emau solo, intervera, vera solo, bistrot, rautster, pixel, blocq solar, eblocq, stack, woody, preva urbana, miela, blocq, rivage
- **tables** – tably, vera
- **litter bins** – minium, lena, nanuk, tlesk
- **railings** – lotlimit, cydlimit
- **bicycle stands** – edgetyre, bikepark, meandre, lotlimit, bikeblocq

3. ANCHORING ON A POLE OR WALL

- litter bins – minium, lena
- information medium – C-light if, C-light

4. SPECIAL ANCHORING

- **park benches** – woody (includes adjustable feet that help to compensate for uneven ground), satellite, orbit
- **bicycle stands** – bikepark

5. REMOVABLE

- **removable pillars** – donat, elias, isac, lot

6. WITHOUT ANCHORING

- **park benches** – stack, rautster, woody, construqta, bohém
- **litter bins** – swissbin, nanuk, minium, better
- **ashtray** – valet
- **planters** – květa, malageno

Anchoring options of street shelters

1. ANCHORING UNDER THE PAVEMENT

Shelters anchored 150 mm below ground level

- **bicycle shelters** – edge, aureo velo
- **smoking shelters** – edge

Shelters anchored 200 mm below ground level

- **bus shelters** – aureo, geomere
- **smoking shelters** – aureo

Shelters anchored 250 mm below ground level

- **shelters and pavilion** – pin

2. ANCHORING TO THE PAVEMENT

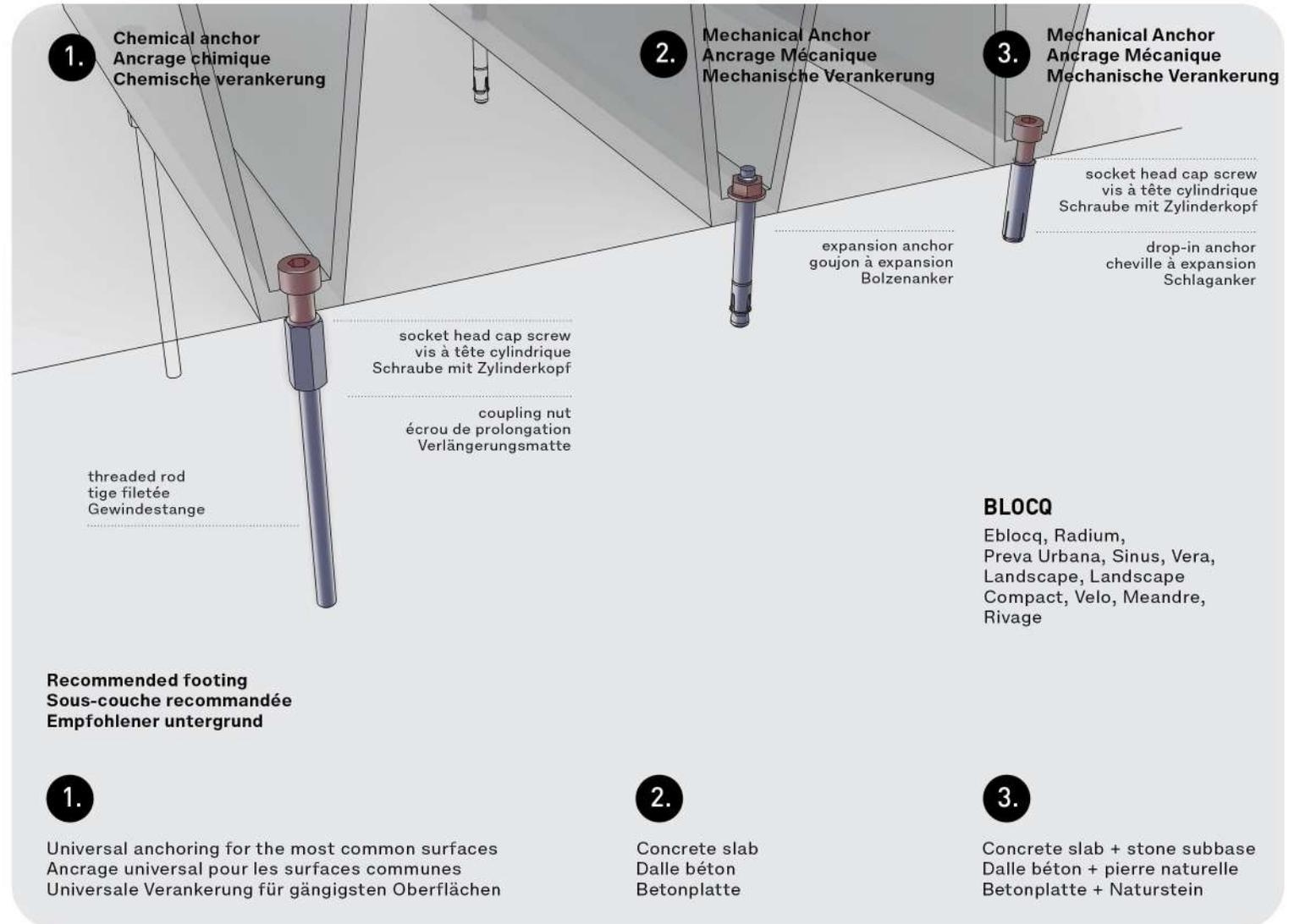
- **bicycle stands** – edge

ANCHORING ANCRAGE VERANKERUNG

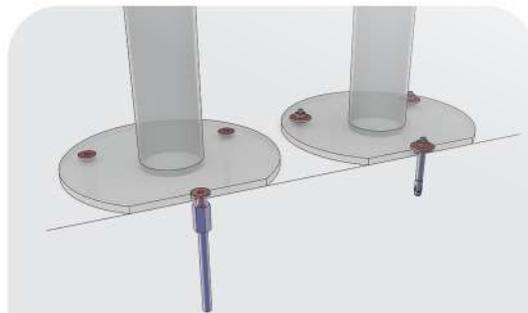
EN Types of removable anchoring
Anchoring and its details significantly influence the overall result and mmicité pays a great attention to this issue. We don't like unsightly base plates and visible screws. For the best result, we choose embedded or hidden anchoring whenever possible. However, when surface mounting and removable options are needed, we have thought-out solutions as well.

FR Variants d'ancrage escamotable
Ancrage sur la surface du mobilier urbain influence fortement l'aspect visuel final et mmicité prête attention à ce détail. Des platines désagréables et visserie visible font parti de l'histoire. Pour la plupart de nos produits il est possible d'utiliser l'ancrage caché. Il existe certaines situations dans lesquelles il faut utiliser l'ancrage escamotable. Même ici, nous avons trouvé la solution.

DE Typen der demontierbaren Verankerung
Die Verankerung von einzelnen Elementen des Stadtmobiliars auf die Oberfläche beeinflusst grundsätzlich das gesamte Ergebnis und mmicité schenkt diesem Detail große Beachtung. Die unansehnliche Erdfüsse und sichtbare Schrauben gefallen uns nicht. Deshalb ist eine verdeckte Verankerung bei Mehrheit von unseren Produkten möglich. Es kommen aber Situationen, wenn es nötig ist, die Verankerung auf die Oberfläche anzuwenden, was die zukünftige Demontage ermöglicht. Auch für solche Situationen haben wir eine Lösung.

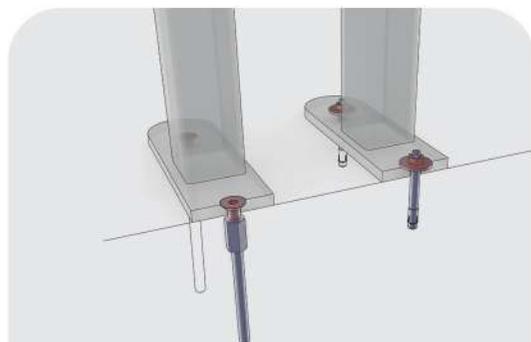


Other types
Autres variants
Andere Typen



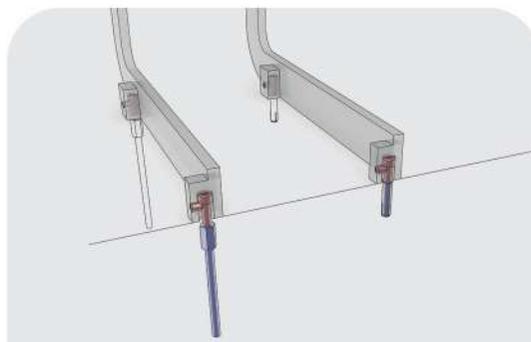
LENA

Cylindre, Valet, Lotlimit, Cydlimit,
Donat, Elias, Mielon, Isac, Lot, Manta

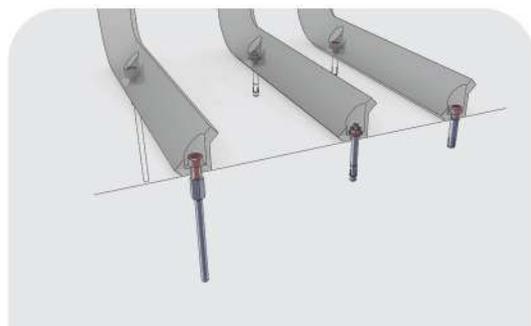


EMAU SOLO

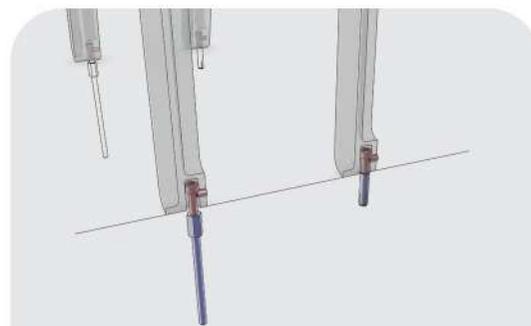
Intervera, Vera Solo, Tably, Bikepark,
Edgetyre, Lotlimit



LIMPIDO



PORTIQOA

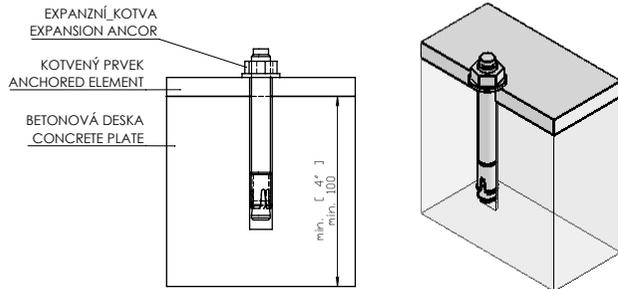


MIELA

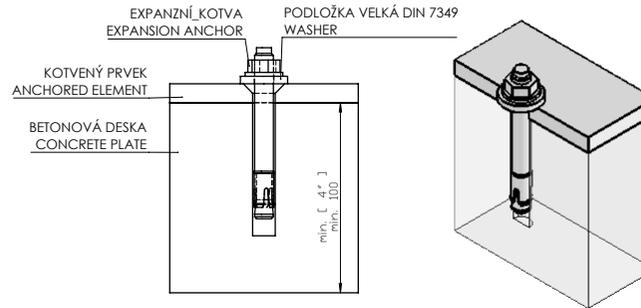
Vltau, Emau



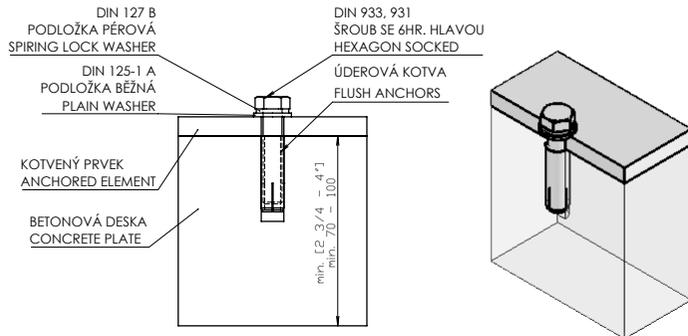
EXPANZNÍ KOTVA EXPANSION ANCHOR



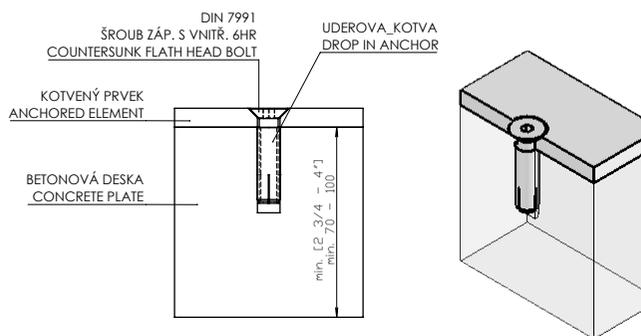
EXPANZNÍ KOTVA + PODLOŽKA EXPANSION ANCHOR + WASHER



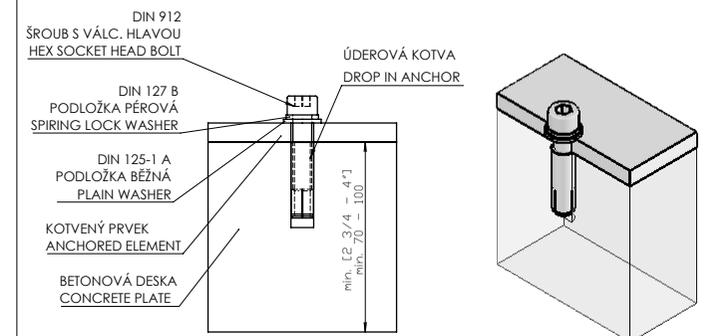
ÚDEROVÁ KOTVA + ŠROUB SE 6HR HLAVOU DROP IN ANCHOR + HEX BOLT



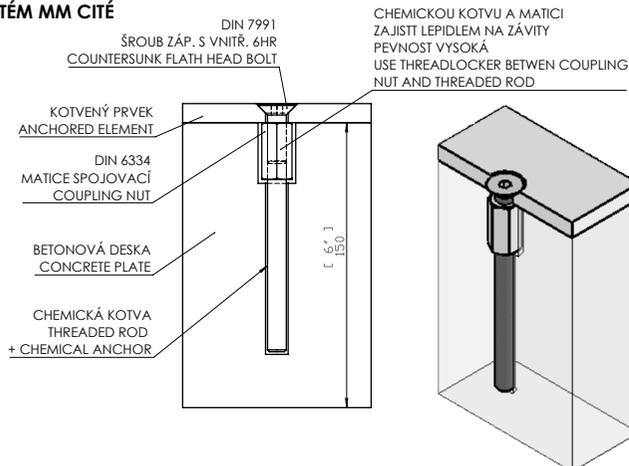
ÚDEROVÁ KOTVA + ŠROUB SE ZÁPUSŤNOU HLAVOU DROP IN ANCHOR + COUNTERSUNK FLAT HEAD BOLT



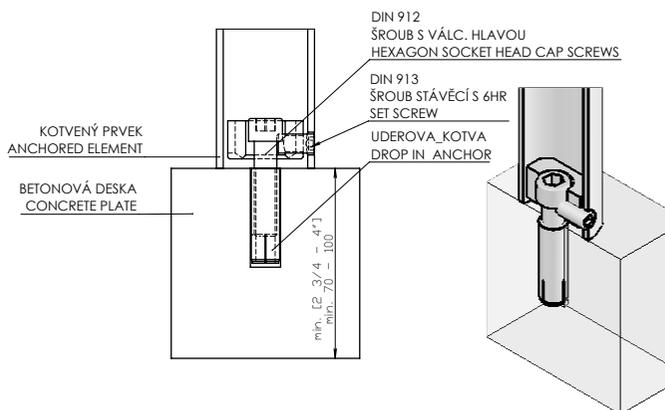
ÚDEROVÁ KOTVA + ŠROUB S VÁCOVOU HLAVOU DROP IN ANCHOR + HEX SOCKET HEAD BOLT



SYSTÉM MM CITĚ



ÚDEROVÁ KOTVA + ŠROUB S VÁCOVOU HLAVOU + STAVĚCÍ ŠROUB DROP IN ANCHOR + HEX SOCKET HEAD CAP SCREWS



!NUTNÉ POUŽÍT SPOLEČNĚ S VÝKRESEM KOTVENÍ PŘÍSLUŠNÉHO VÝROBKU!

Uvedené typy odnímatelného kotvení nejsou vhodné na všechny výrobky. Správný typ kotvení musí být konzultován s výrobcem. Montáž spojovacího materiálu musí probíhat dle montážního návodu výrobce spojovacího materiálu.

!IT IS NECESSARY TO USE THIS DRAWING TOGETHER WITH THE FOUNDATION DRAWING OF THE CORRECT PRODUCT!

Listed types of removable anchoring are not suitable for all products. The correct type of anchoring must be consulted with the manufacturer. The assembly of connecting material must be made according to the manufacturer of connecting material's assembly instructions.

Rozměry výrobků mají informativní charakter. Výrobce si vyhrazuje právo na změnu technické specifikace bez předchozího upozornění. Rozměry spodní stavby a způsob osazení výrobku jsou závazné. Minimální únosnost základové půdy 150kPa. Rozteče kotvěv měřit podle rozměrů dodaného výrobku. All product sizes have an informative character. The producer reserves the right to amend the technical specification at any time without previous warning. The size of foundation baseplate and the method of mounting of the product are imperative. Minimal load-bearing capacity of the soil 150kPa. Anchor spacing measure out by measurements of supplied product. Die Abmessungen der Produkte sind informativ. Der Hersteller behält sich das Recht an Änderungen der technischen Spezifikationen vor, ohne vorher darauf hinzuweisen. Abmessungen der Fundamentierung - Unterbau und Art des Produktanbaus sind verbindlich. Minimum Tragfähigkeit des Bauuntergrundes 150 kPa. Ankerabstand gemäß der gelieferten Produktabmessungen dimensionieren. Les dimensions des produits sont à titre informatif seulement. Le fabricant se réserve le droit de modifier les spécifications techniques sans préavis. Dimensions des fondations et manière de l'implantation du produit sont obligatoires. La capacité portante du sol 150 kPa (minimum). Ancrage écartement dimensions à partir des dimensions du produit livré. Las dimensiones de los productos tienen carácter informativo. El fabricante se reserva el derecho de cambio de la especificación técnica sin aviso previo. Tanto las dimensiones de las bases de cimentación como el sistema de fijación son inalterables. Capacidad portante mínima del suelo 150kPa. Hay que medir el espaciamiento de anclajes según las dimensiones del producto suministrado.

DATE: 17.4.2019 V 01
Minimal load-bearing capacity of the soil 150kPa
dimensions in mm[inch]

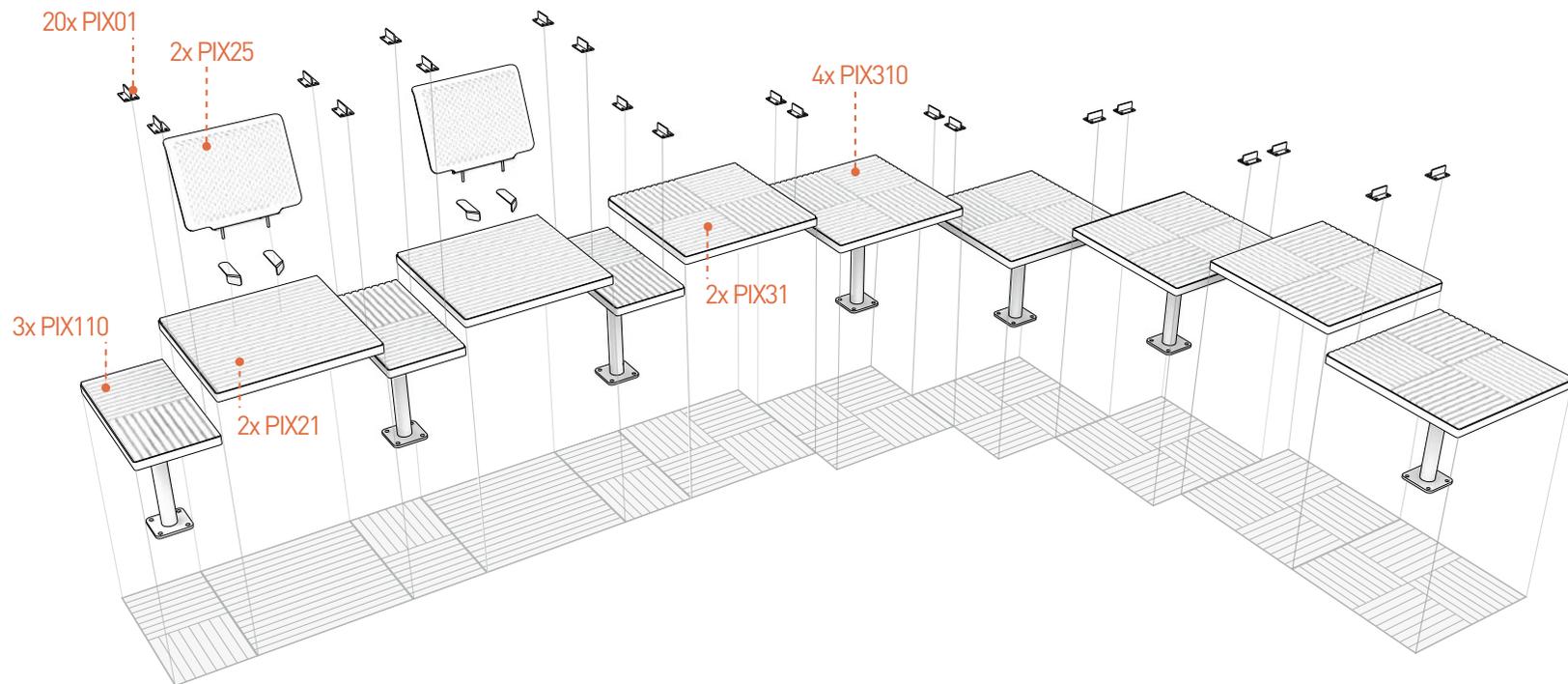
ODNÍMATELNÉ KOTVENÍ REMOVABLE ANCHORING

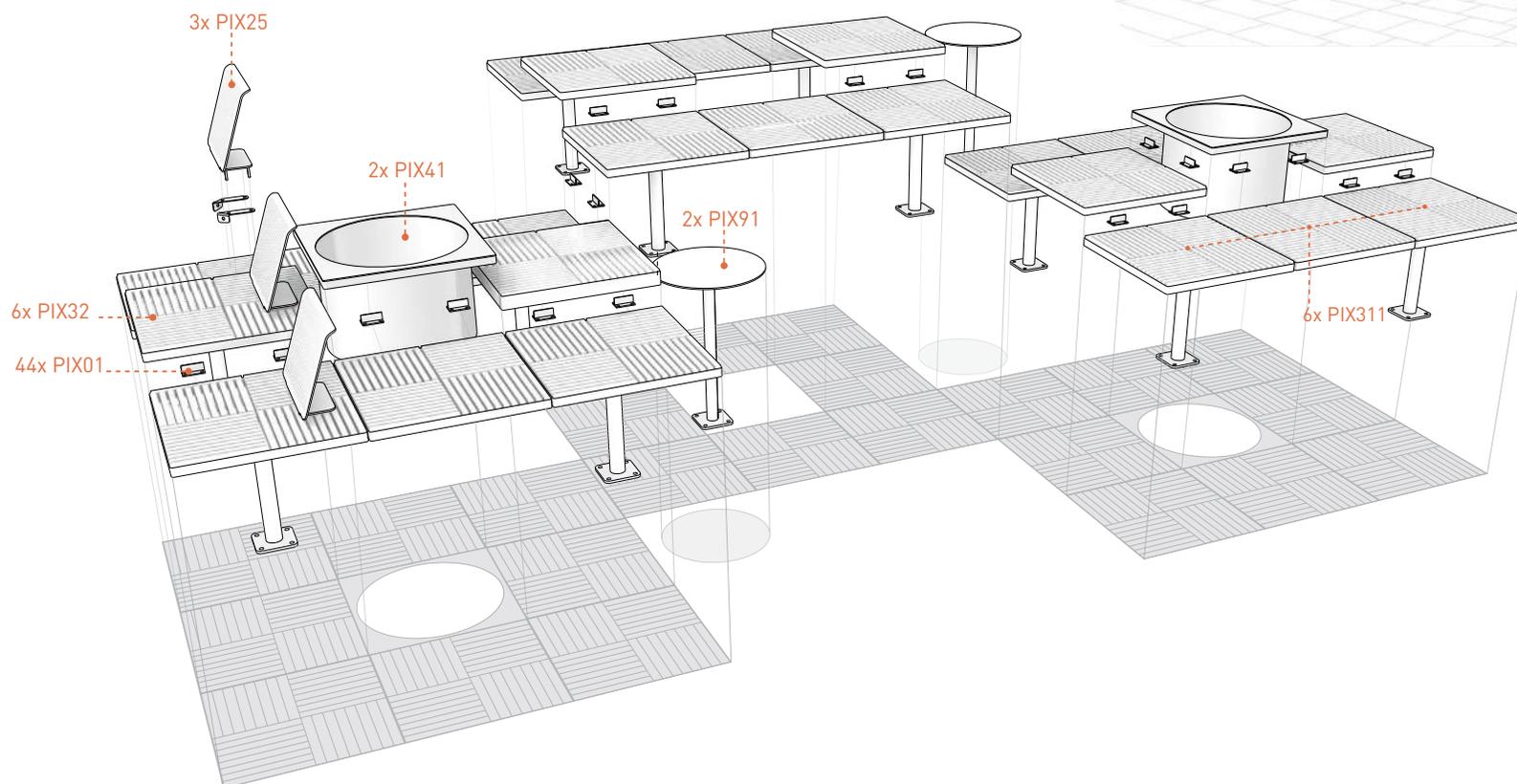
All rights reserved. Protection of industrial design.

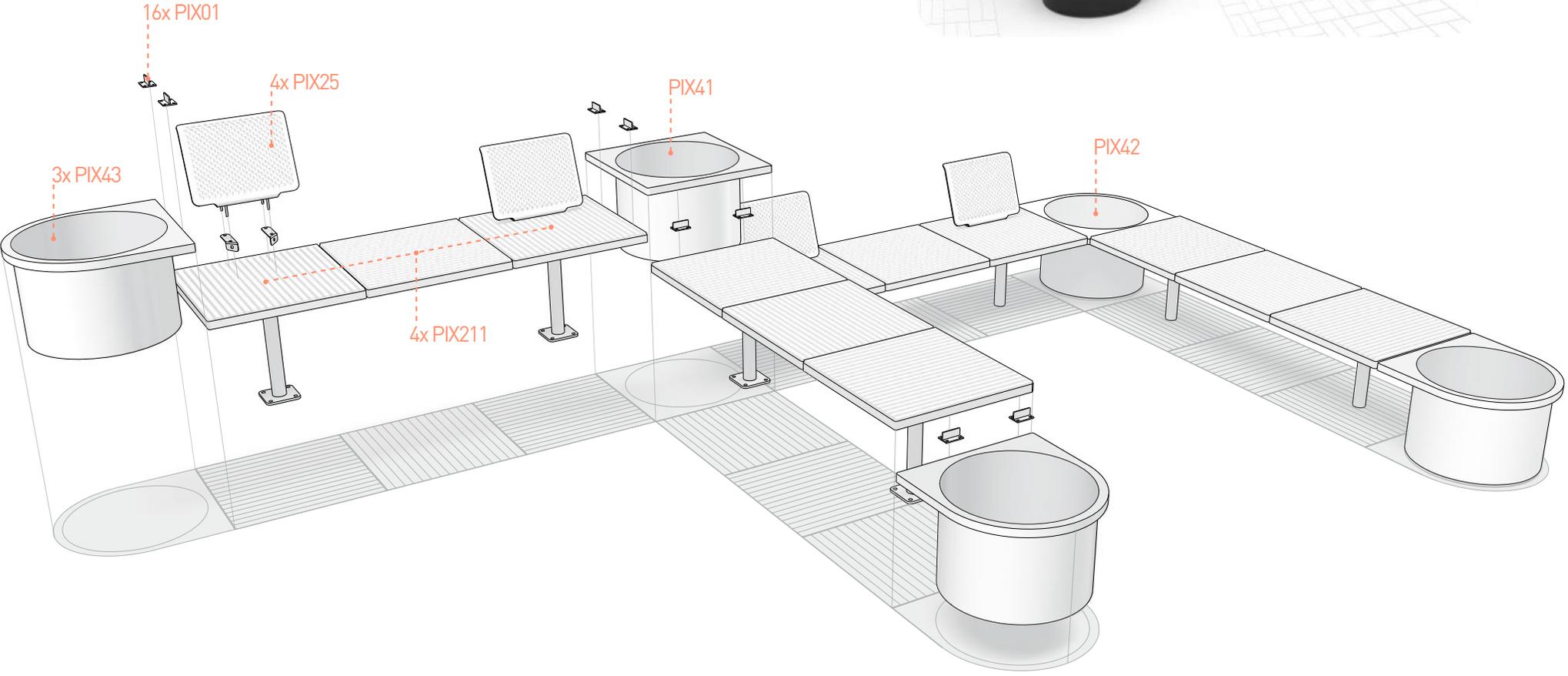


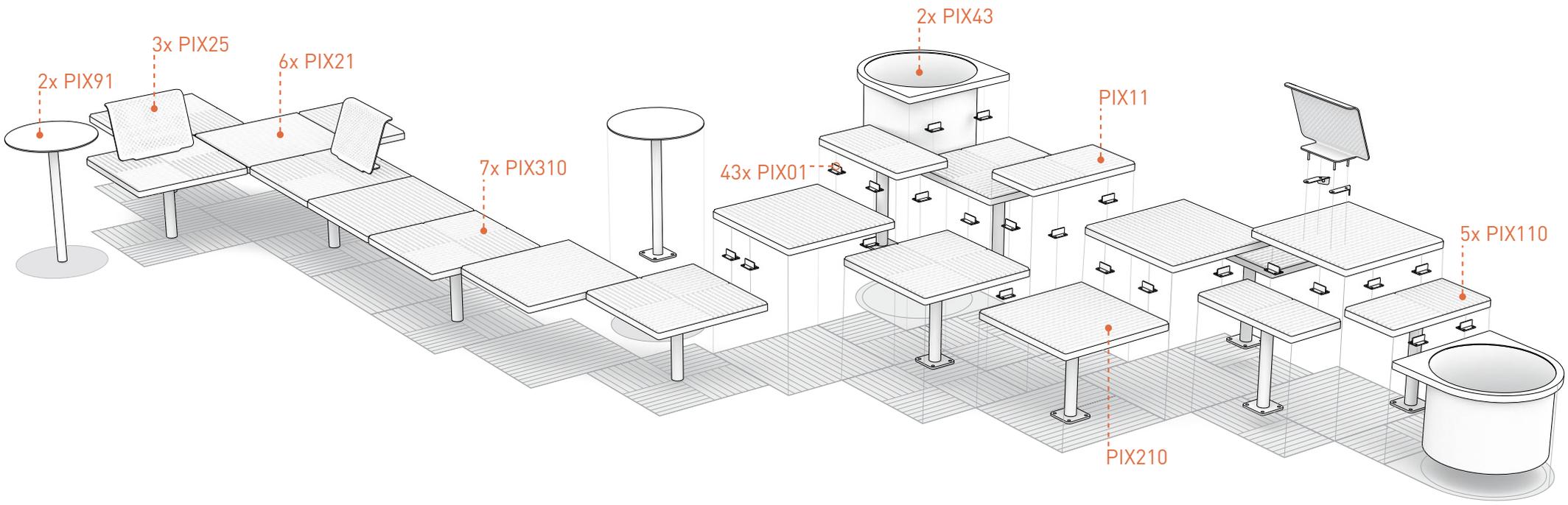
mmcite.com

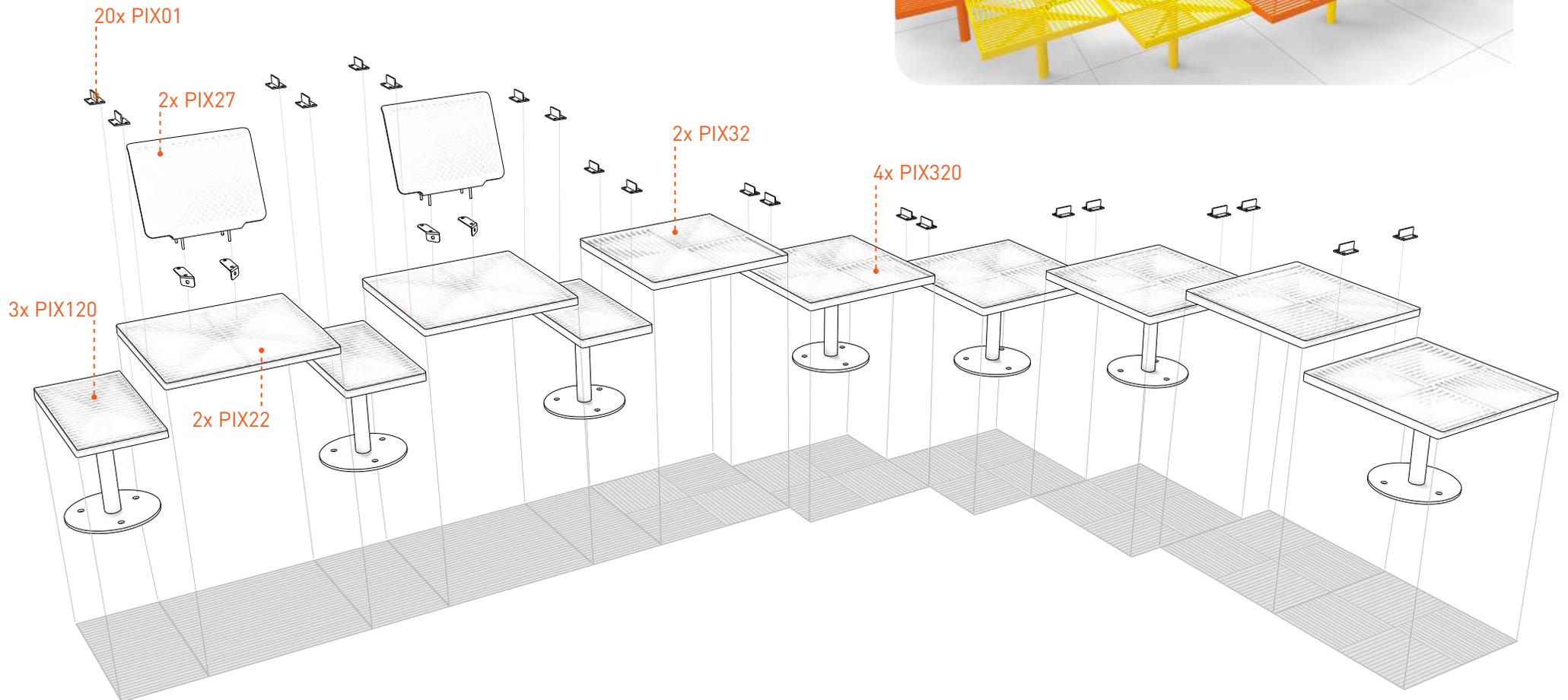
→ **park benches:** pixel, landscape compact, vera solo



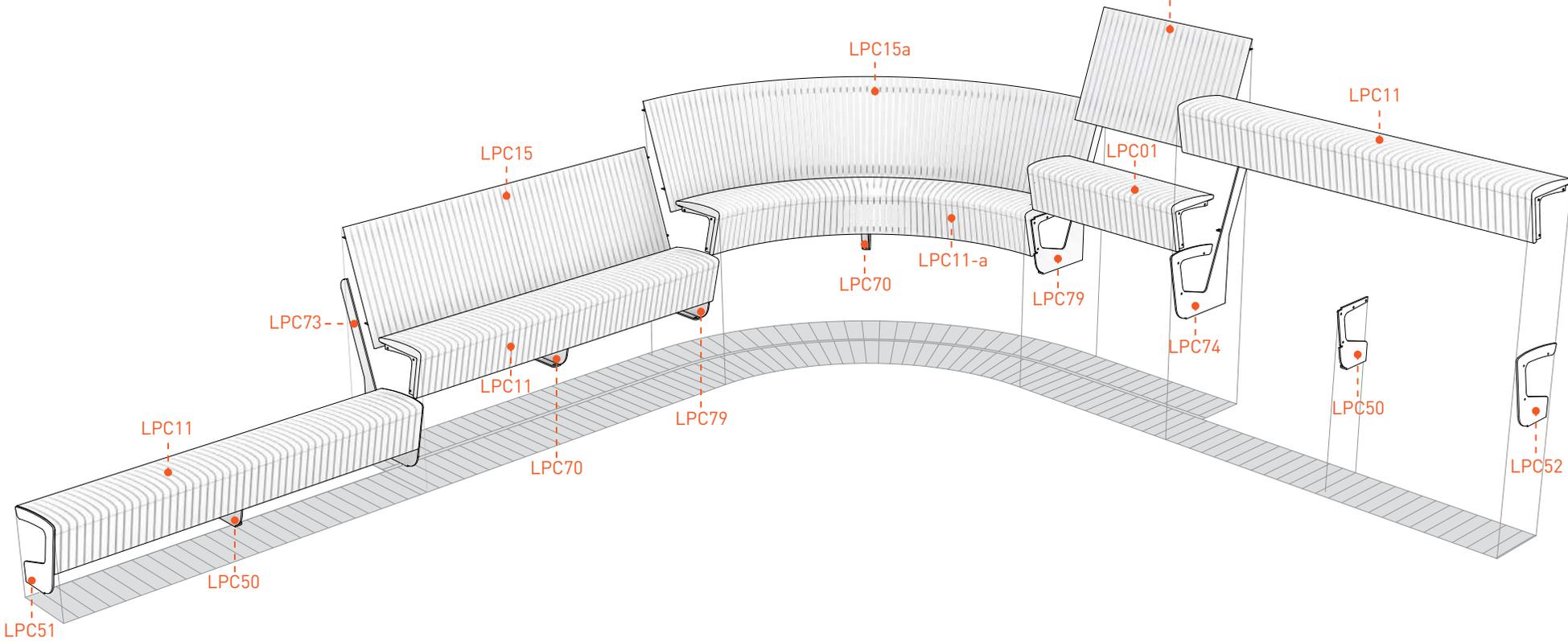




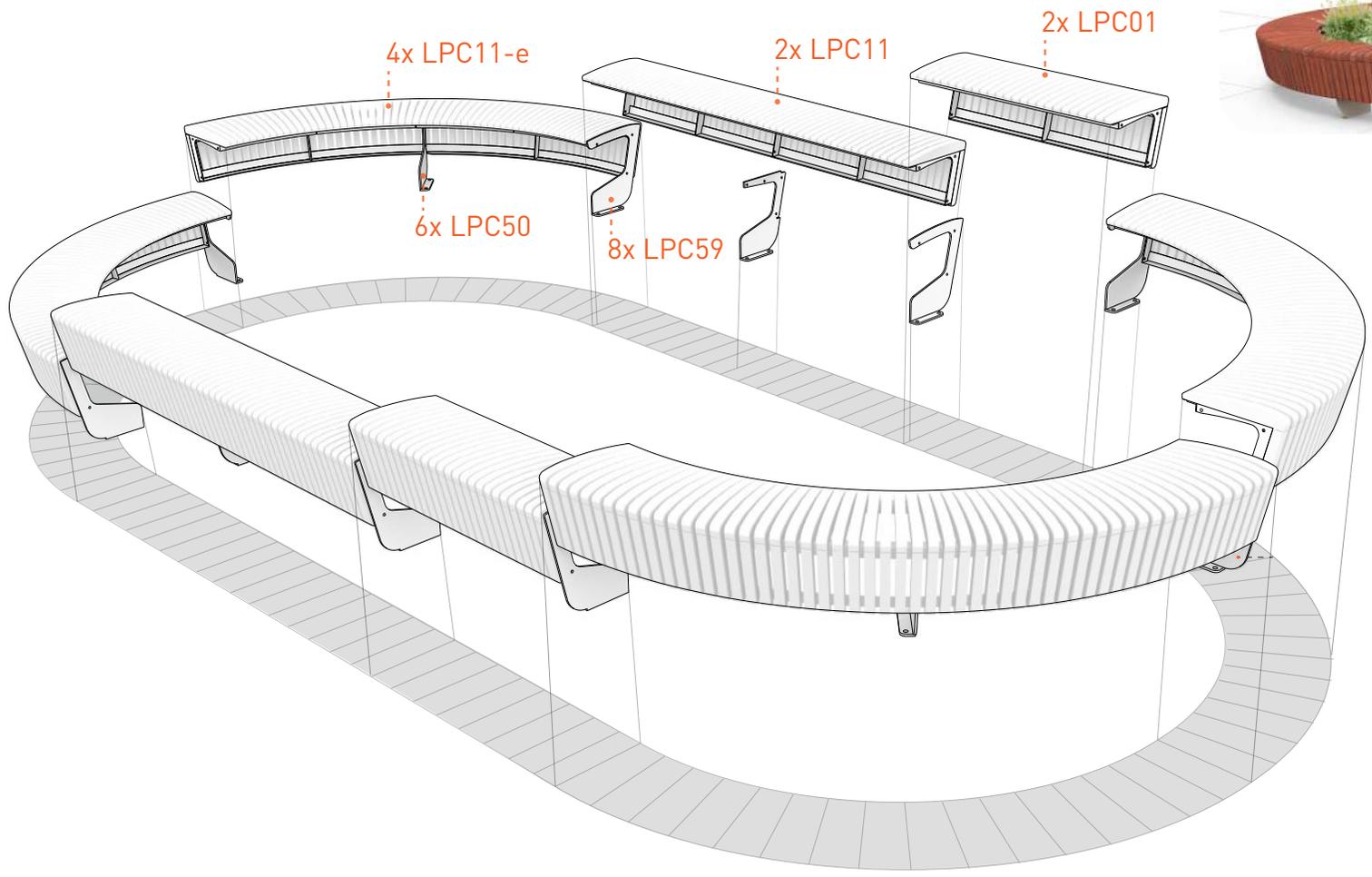




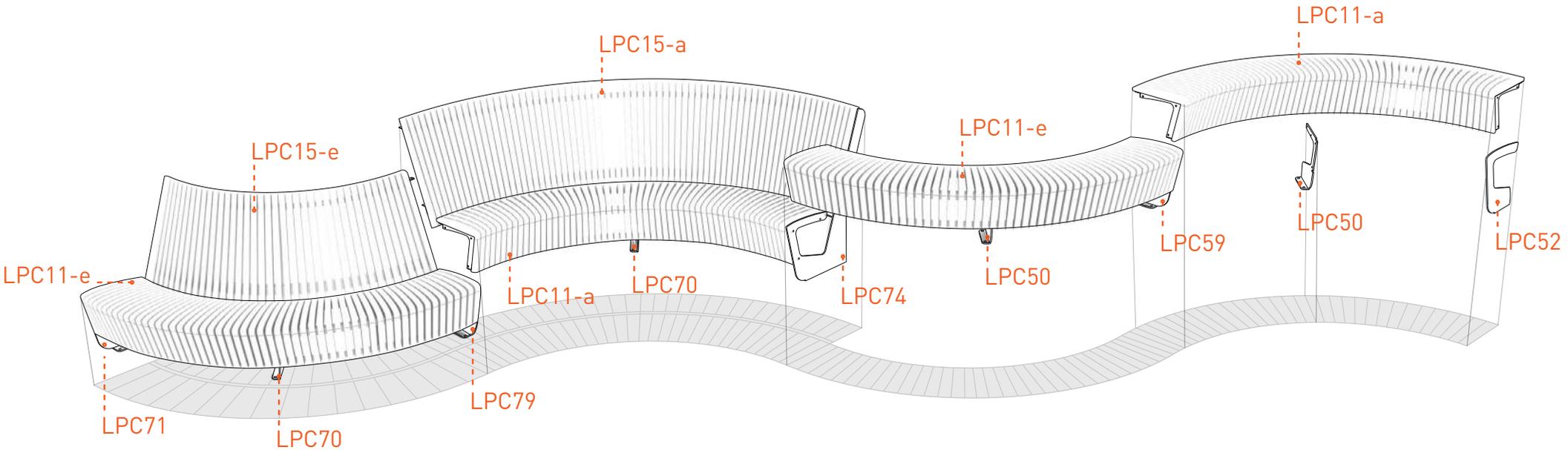
Landscape Compact



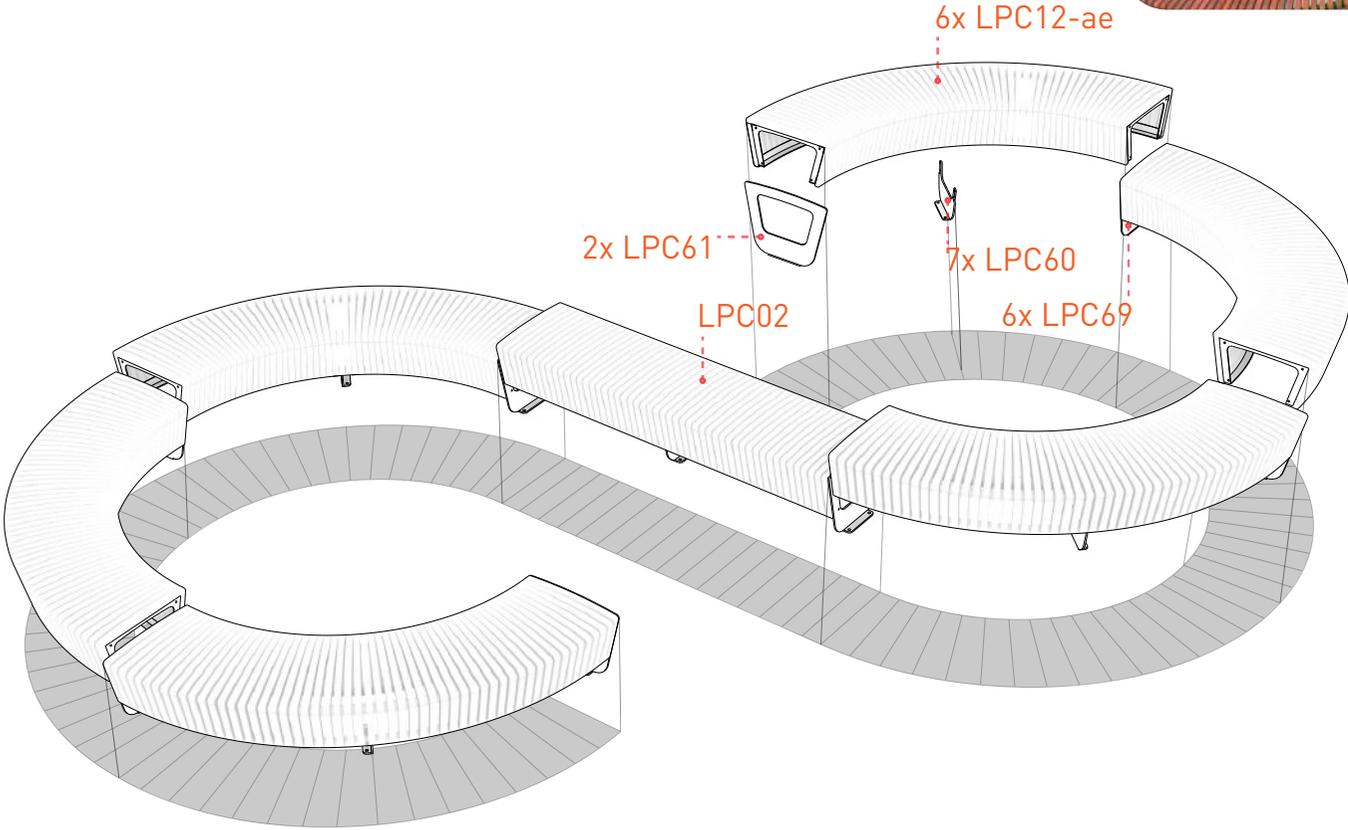
Landscape Compact



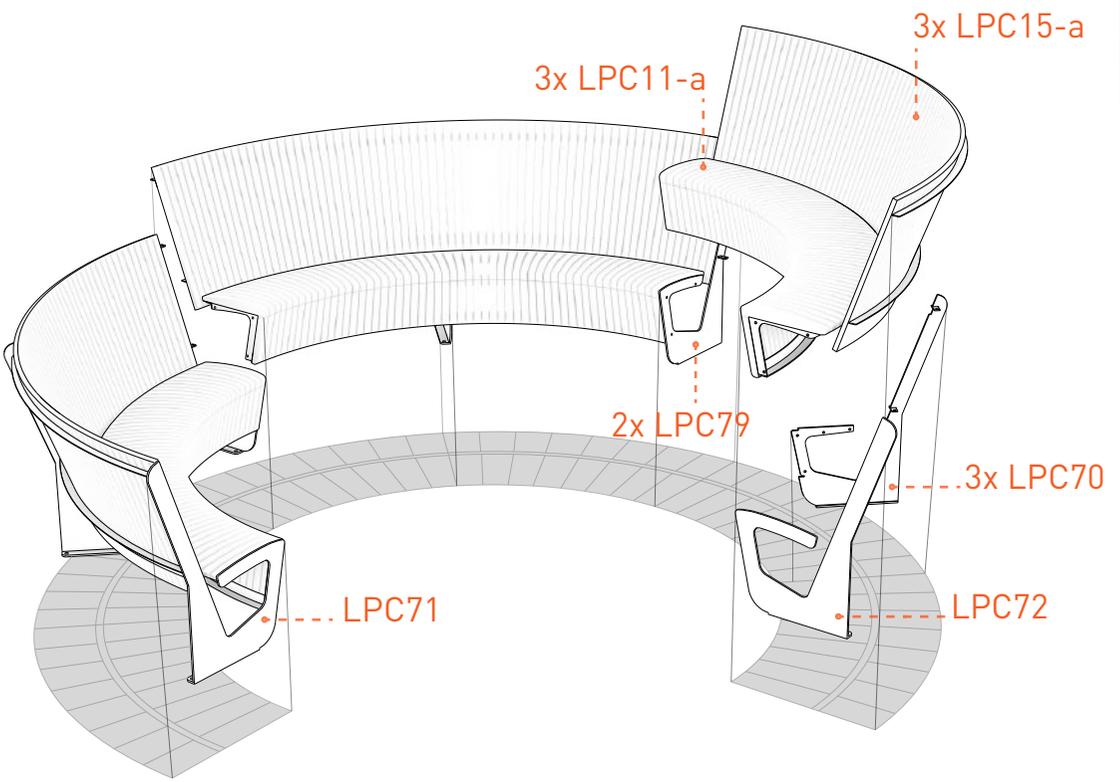
Landscape Compact

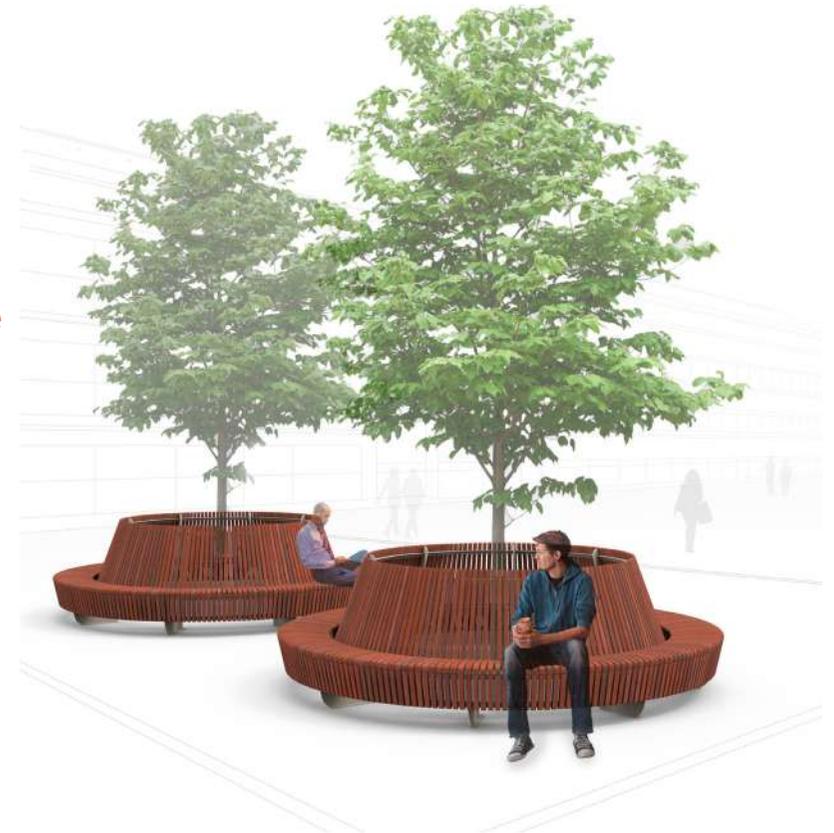
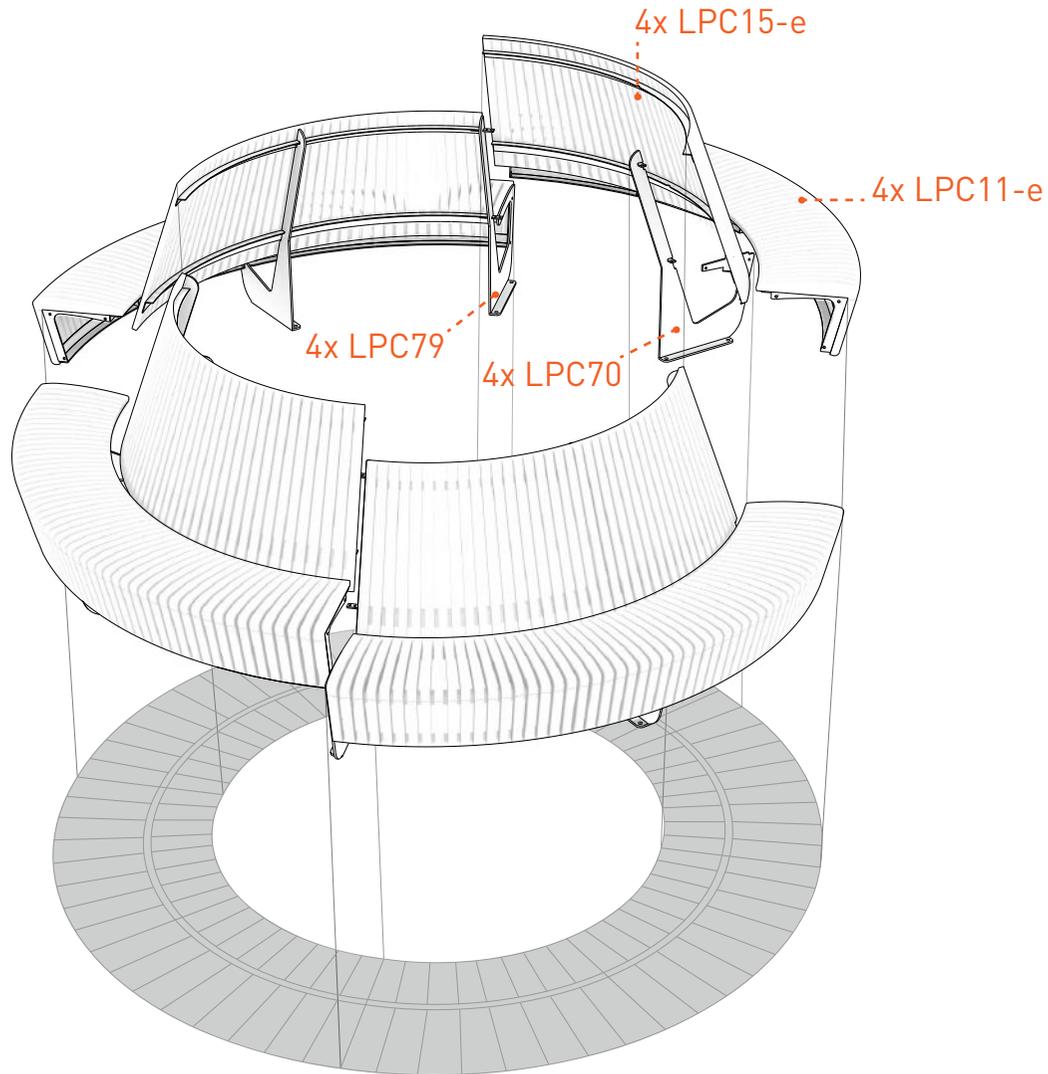


Landscape Compact

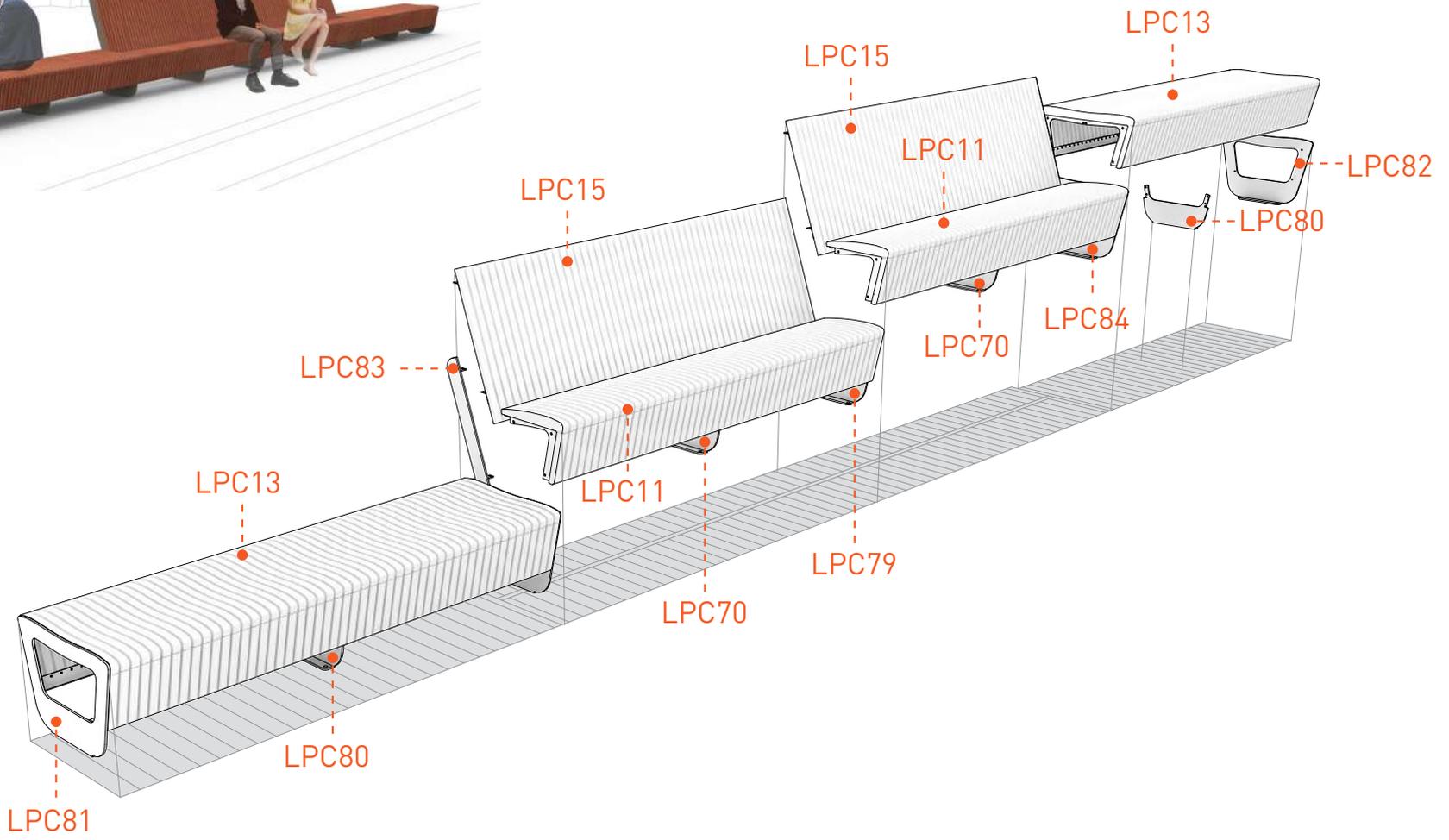


Landscape Compact



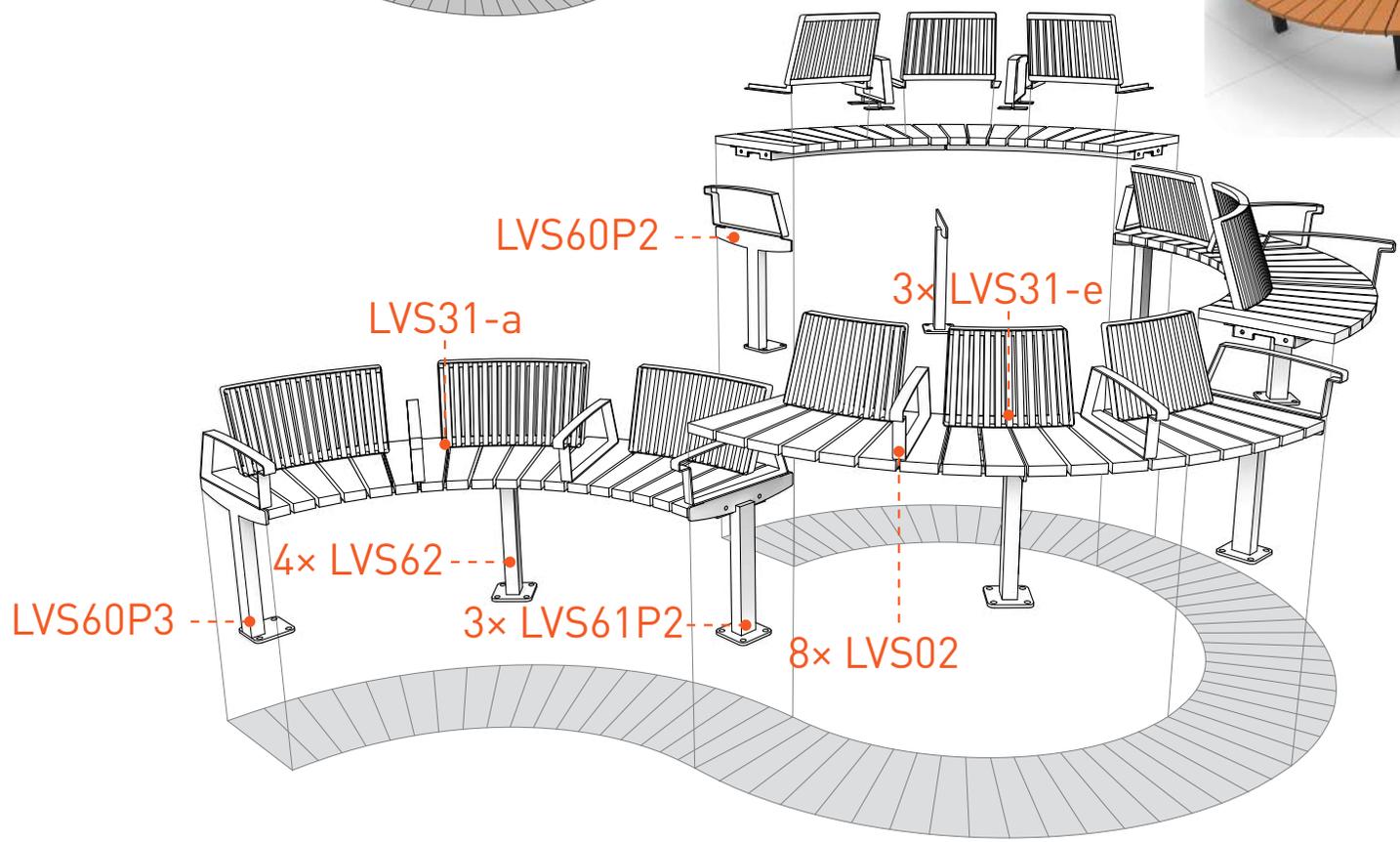
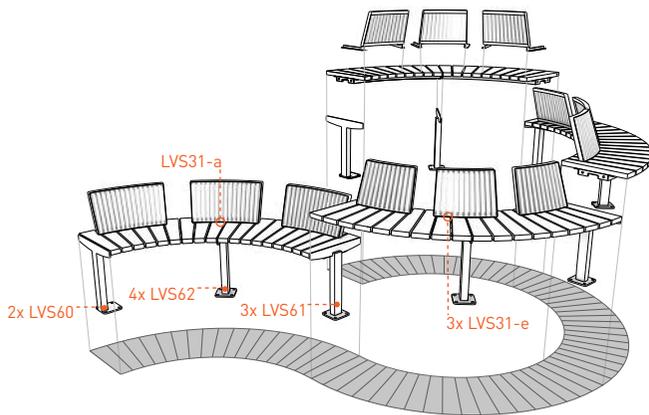


Landscape Compact



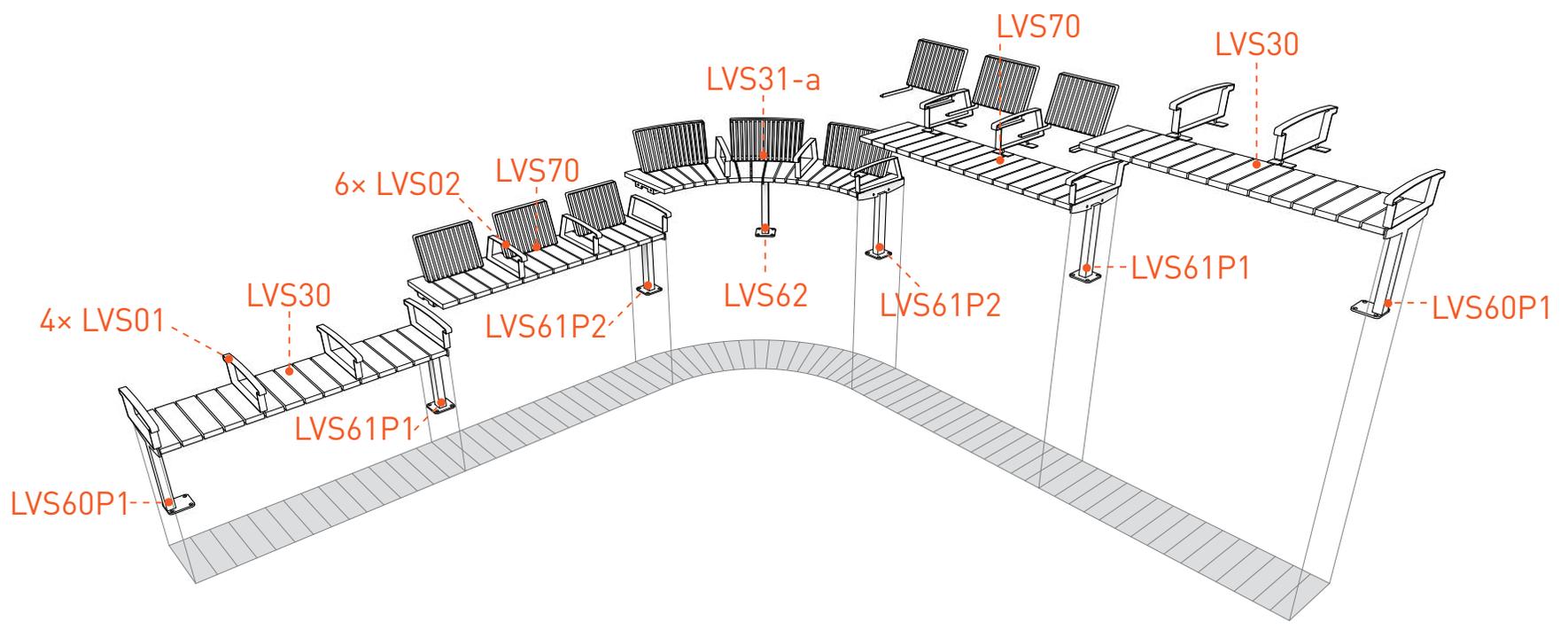
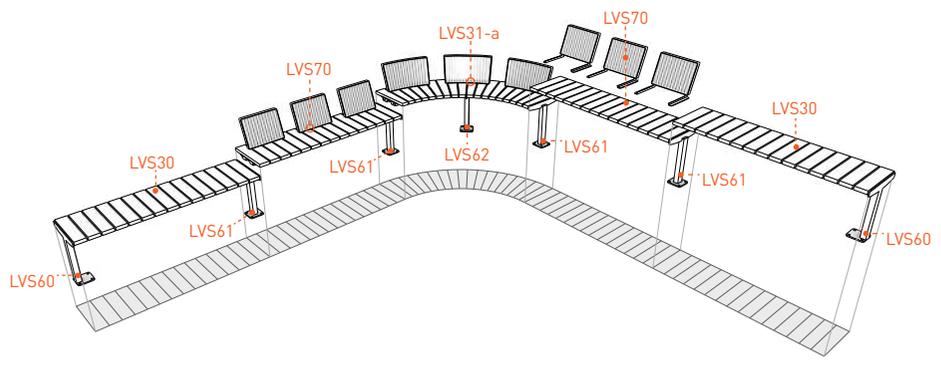
Vera Solo

mmcite.com



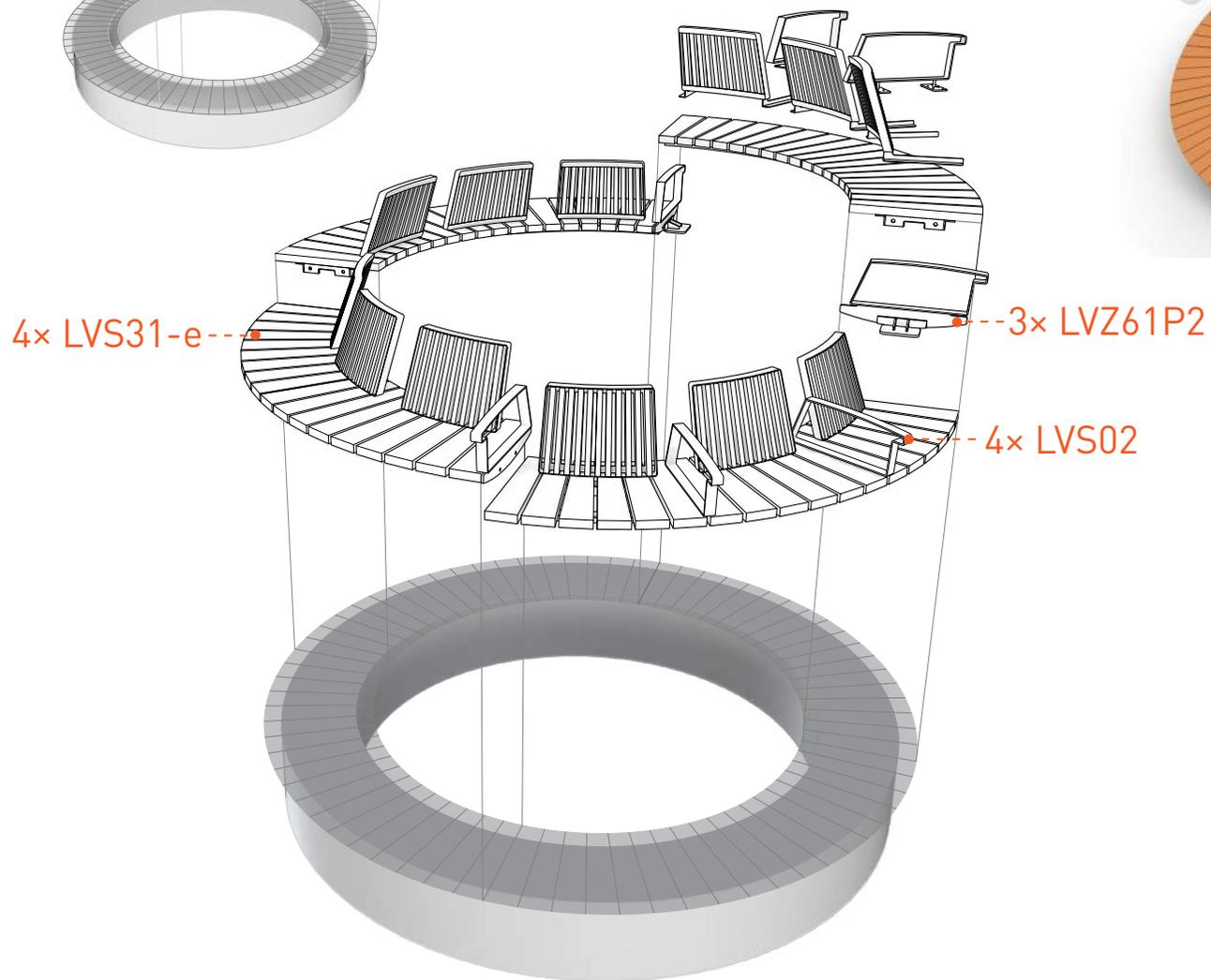
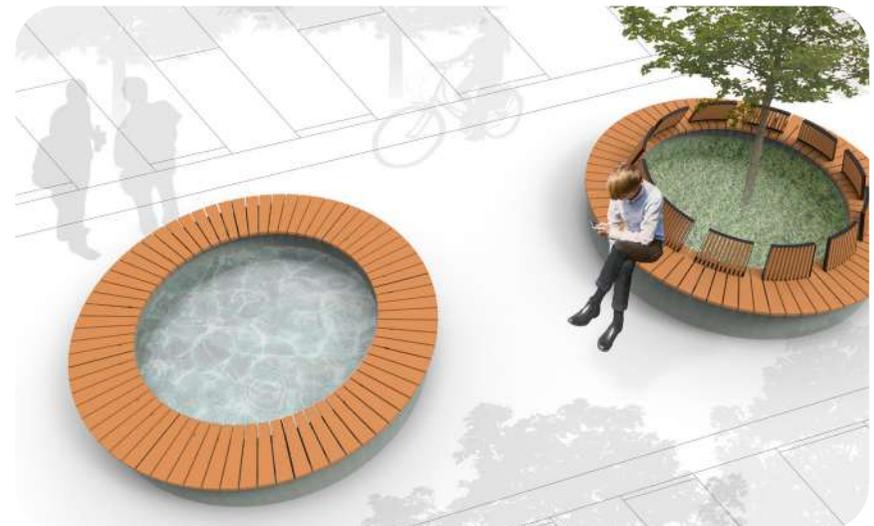
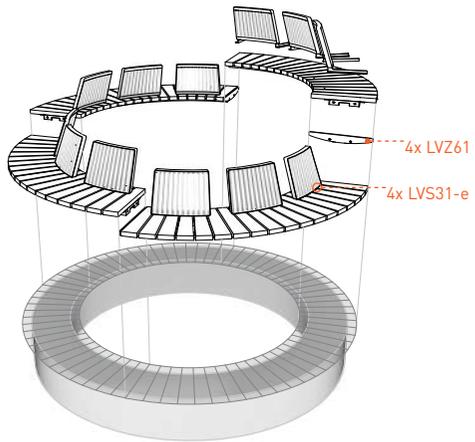
Vera Solo

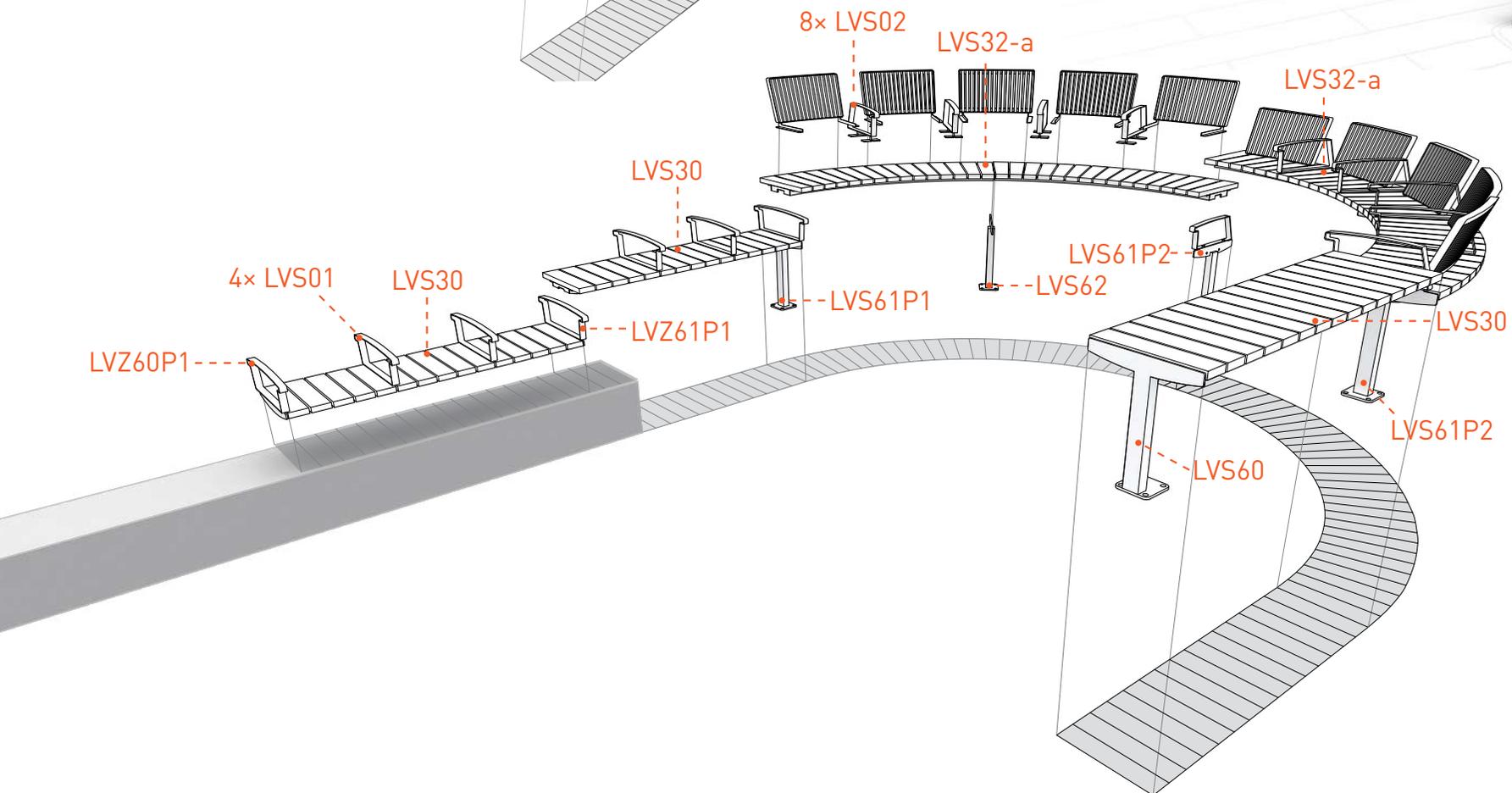
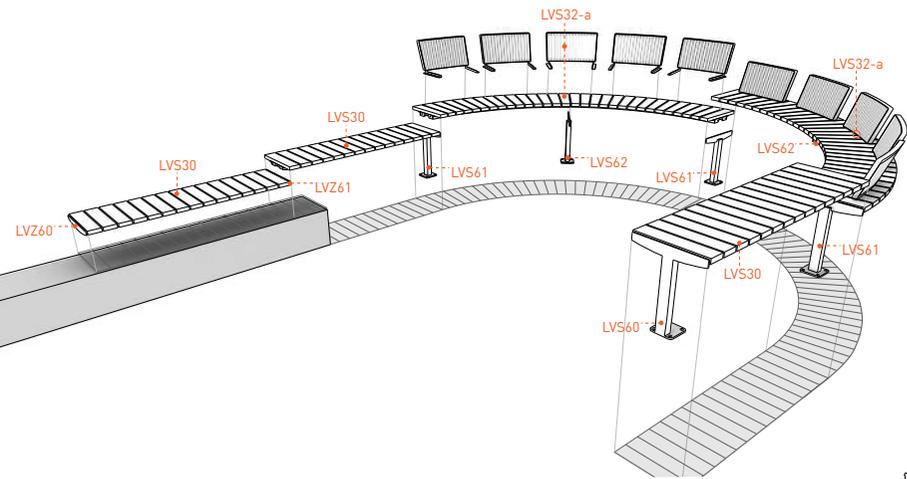
mmcite.com

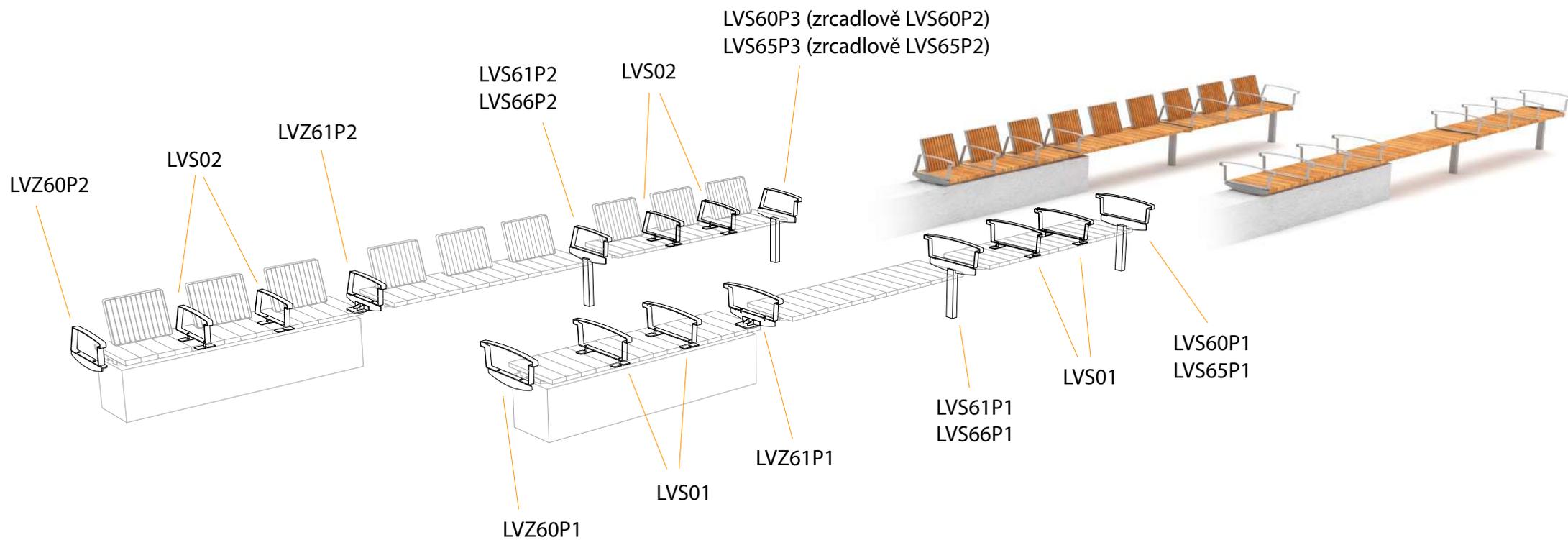


Vera Solo

mmcite.com

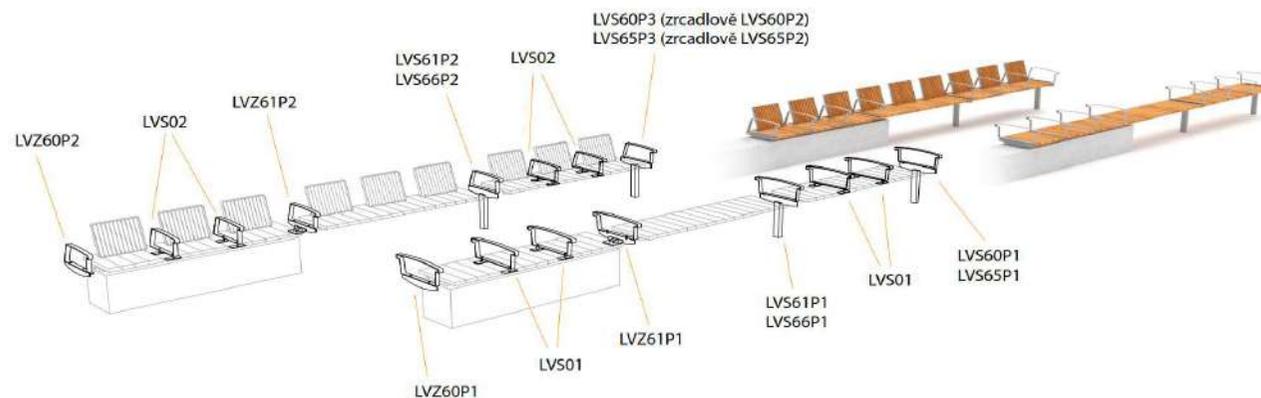






Područky v LVS

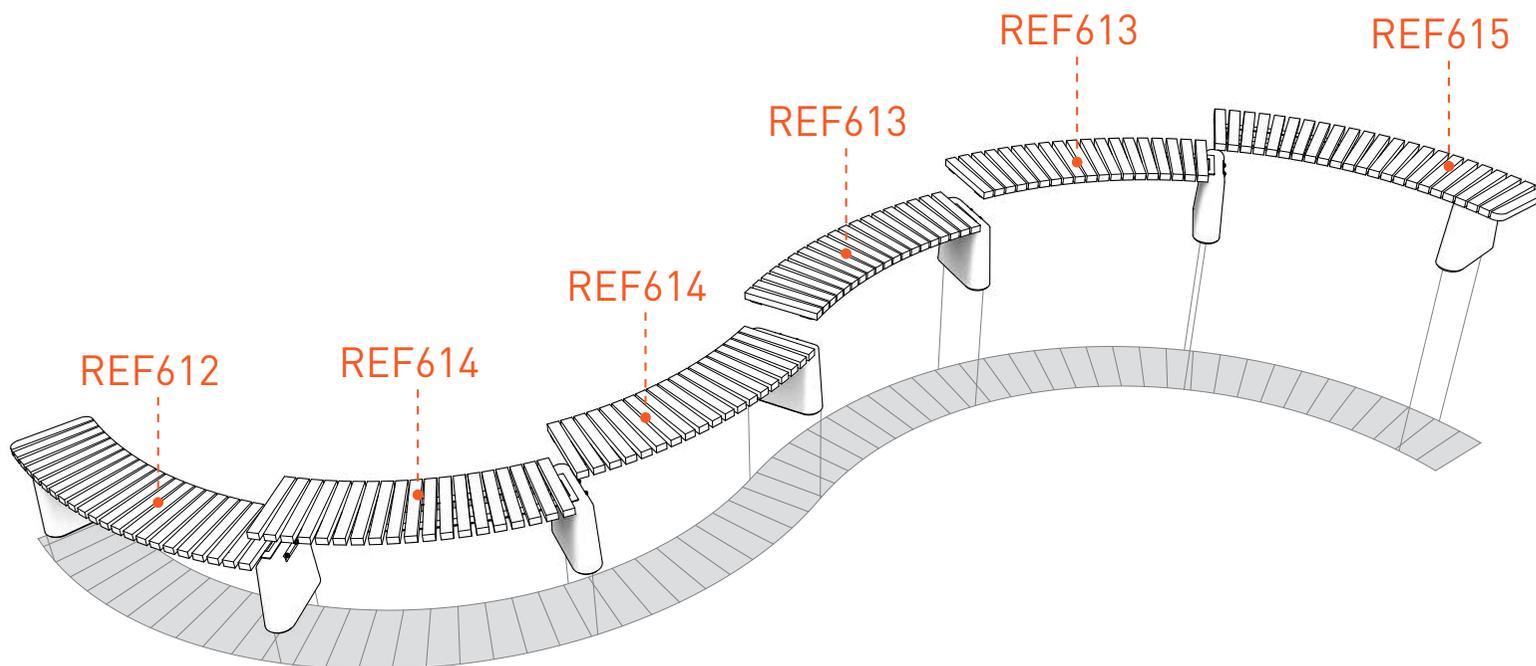
- područky typově řešeny pouze pro dřevěné verze s příčnými prkny
- v místech krajových a spojovacích noh jsou područky součástí těchto noh (svařeno), tzn. že pro umístění područky v těchto pozicích nutno objednat příslušnou nohu LVS6xPy, kde "x" vychází z typu nohy a "y" značí směr područky (1-oboustraná; 2 a 3-levá/pravá)



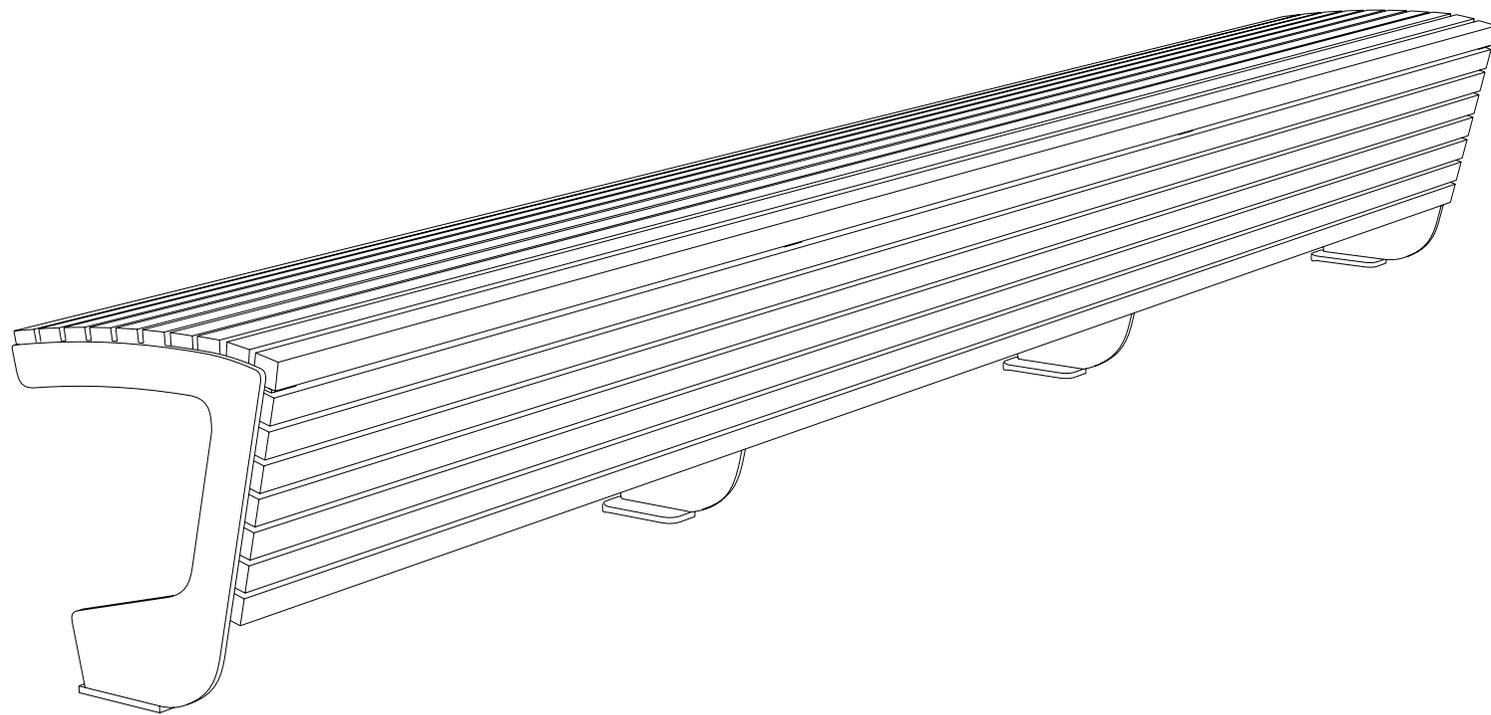
Celkový přehled

KÓD	SCHEMA PODRUČKY/NOHY	POPIS	příbuzné typy noh		
			NA DLAŽBU	NEREZOVÁ NA DLAŽBU	NEREZOVÁ POD DLAŽBU
LVS01		OBOUSTRANNÁ PODRUČKA - umístovaná doprostřed bezopěradlových sedáků	-	-	-
LVS02		JEDNOSTRANNÁ PODRUČKA - umístovaná doprostřed sedáků s opěradly	-	-	-
LVS60P1		KRAJOVÁ NOHA S OBOUSTRANNOU PODRUČKOU - použití na libovolném kraji bezopěradlových laviček	LVS 65P1	LVS 65P1N	LVS 60P1N
LVS60P2		KRAJOVÁ NOHA S JEDNOSTRANNOU PODRUČKOU - použití na určeném konci laviček s opěradly (určení směru dle opěradel a patice)	LVS 65P2	LVS 65P2N	LVS 60P2N
LVS60P3		KRAJOVÁ NOHA S JEDNOSTRANNOU PODRUČKOU - použití na určeném konci laviček s opěradly (určení směru dle opěradel a patice)	LVS 65P3	LVS 65P3	LVS 60P3N

KÓD	SCHEMA PODRUČKY/NOHY	POPIS	příbuzné typy noh		
			NA DLAŽBU	NEREZOVÁ NA DLAŽBU	NEREZOVÁ POD DLAŽBU
LVS61P1		SPOJOVACÍ NOHA S OBOUSTRANNOU PODRUČKOU - použití na spoji segmentů bezopěradlových laviček	LVS 66P1	LVS 66P1N	LVS 61P1N
LVS61P2		SPOJOVACÍ NOHA S JEDNOSTRANNOU PODRUČKOU - použití na spoji segmentů laviček s opěradly	LVS 66P2	LVS 66P2N	LVS 61P2N
LVZ60P1		ZÍDKOVÁ KRAJOVÁ NOHA S OBOUSTRANNOU PODRUČKOU - použití na libovolném kraji bezopěradlových laviček montovaných na zídce (područka je od nohy odnímatelná)	-	-	LVZ 60P1N
LVZ60P2		ZÍDKOVÁ KRAJOVÁ NOHA S JEDNOSTRANNOU PODRUČKOU - použití na libovolném kraji laviček s opěradly montovaných na zídce (područka je od nohy odnímatelná)	-	-	LVZ 60P2N
LVZ61P1		ZÍDKOVÁ SPOJOVACÍ NOHA S OBOUSTRANNOU PODRUČKOU - použití na spoji segmentů bezopěradlových laviček montovaných na zídce (područka je od nohy odnímatelná)	-	-	LVZ 61P1N
LVZ61P2		ZÍDKOVÁ SPOJOVACÍ NOHA S JEDNOSTRANNOU PODRUČKOU - použití na spoji segmentů laviček s opěradly montovaných na zídce (područka je od nohy odnímatelná)	-	-	LVZ 61P2N



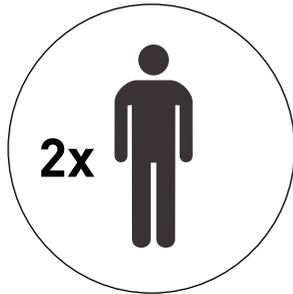
- **park benches:** landscape, construgta, eblocq, satellite
- **bus shelters:** aureo
- **litter bins:** better
- **assembly instruction:** LED, USB



Assembly steps

1. Preparation of concrete foundations and anchoring elements
2. Anchoring
3. Installation of wood grate
4. Installing next segment
5. Finishing

Workers 2 recommended



Hammer drill



Circular saw



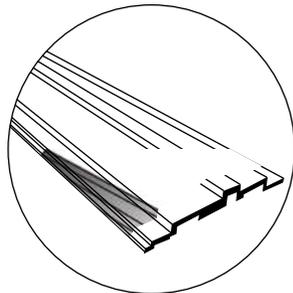
Battery drill



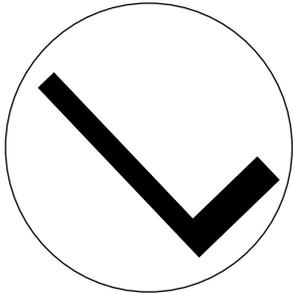
Grinding tools



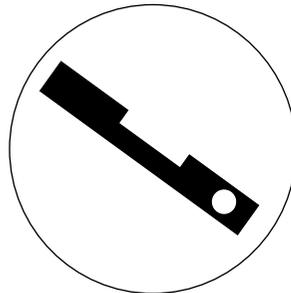
Cutting rail



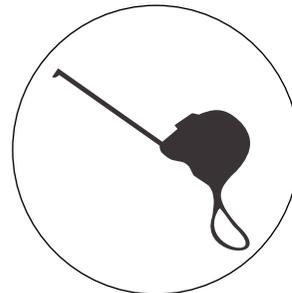
Angle



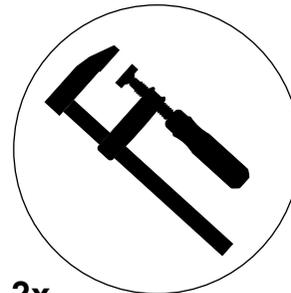
Spirit level



Meter

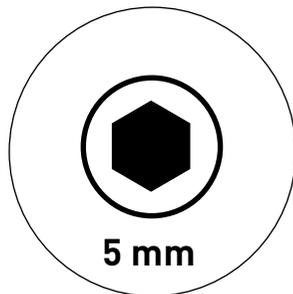


Carpentry clamp

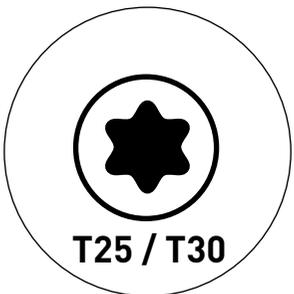


2x

Bit imbus



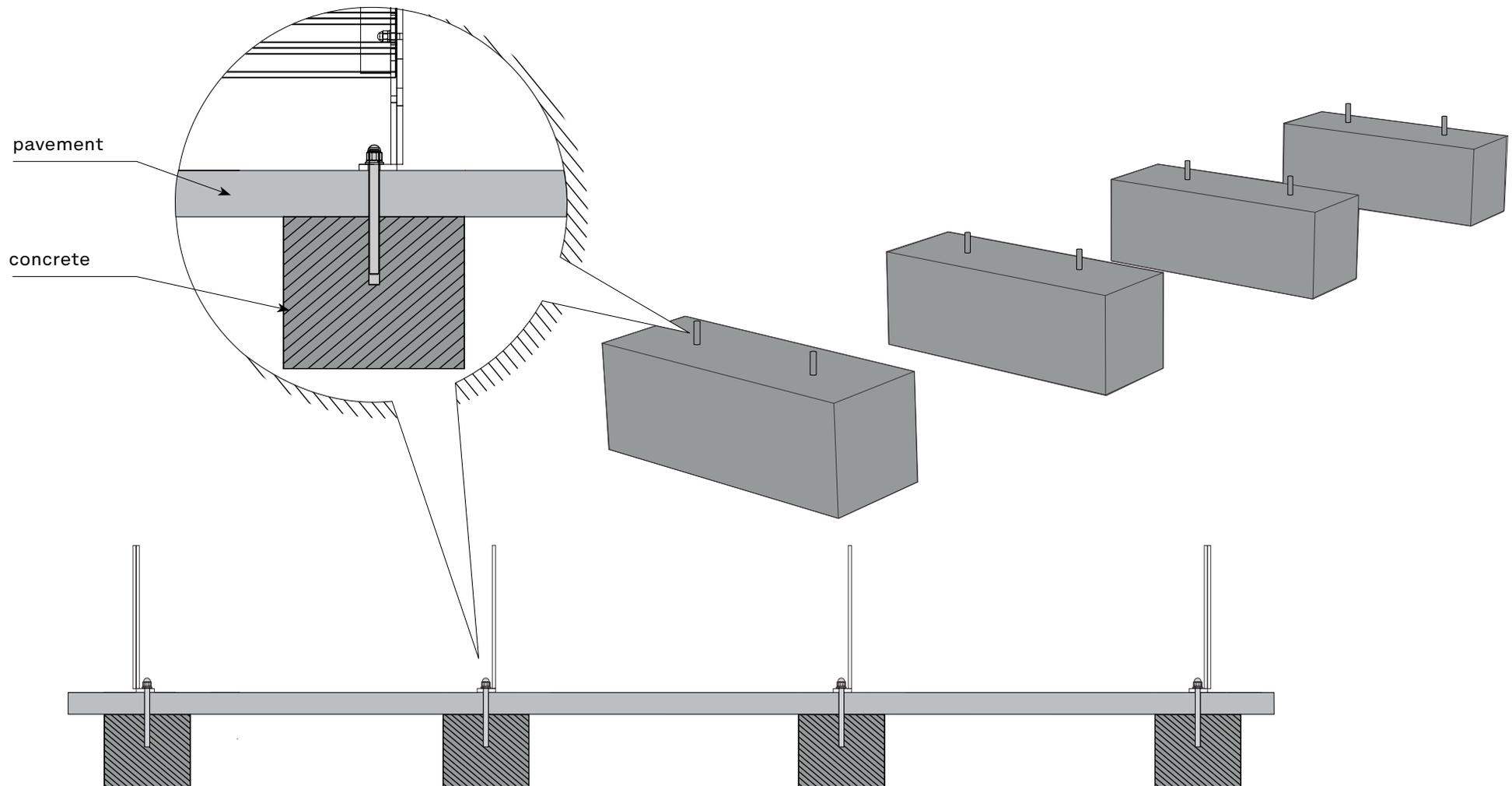
Bit torx



Spanner



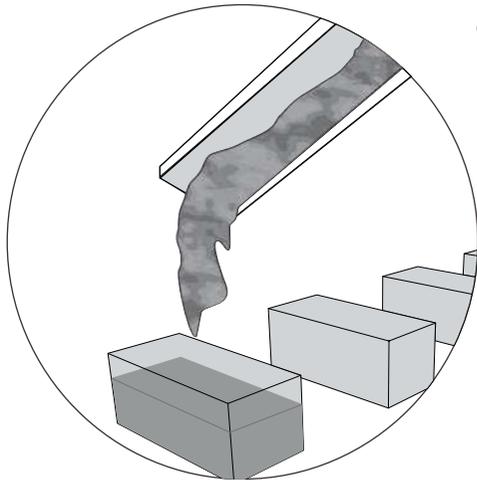
**!Attention – Measuring and anchoring (distances and angles) have to be extremely accurate!
(see anchoring drawings)**



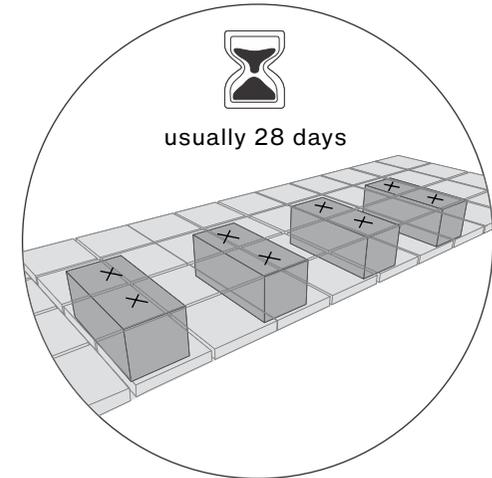
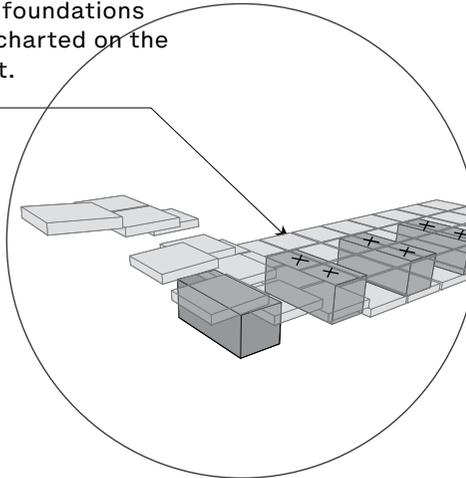
This drawing has only an illustrative character
For more technical details please see the anchoring drawings available on www.mmcite.com

Preparation of concrete foundations and anchoring elements

concrete pouring — partially solidify — paving ————— final strength

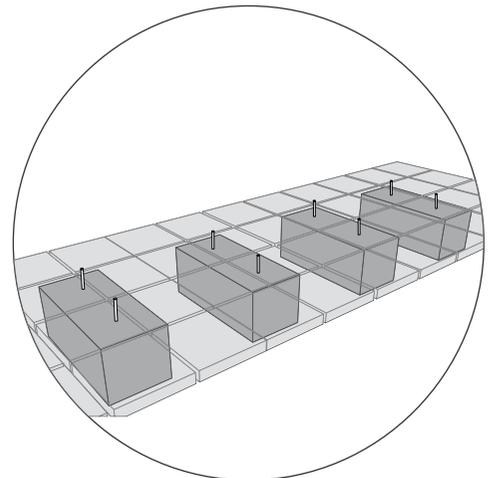
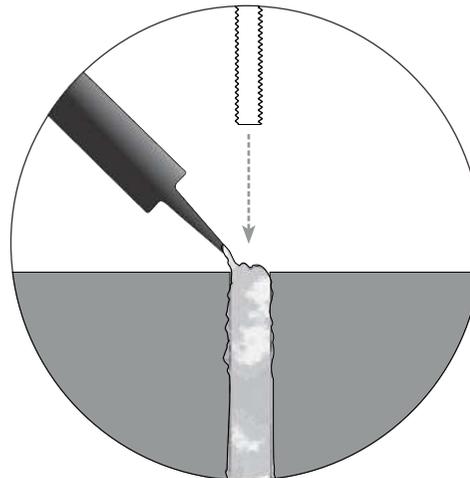
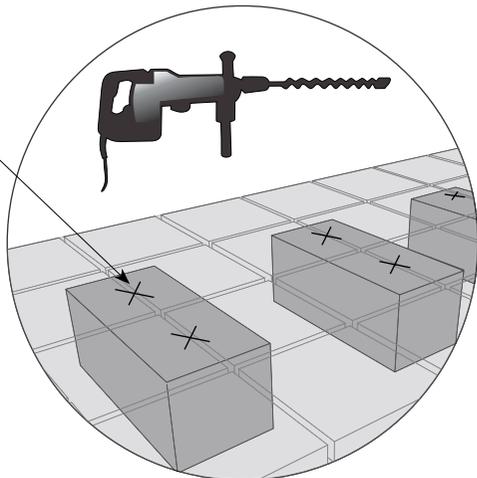


concrete foundations must be charted on the pavement.



holes drilling — holes cleaning ————— chemical anchor ————— finish

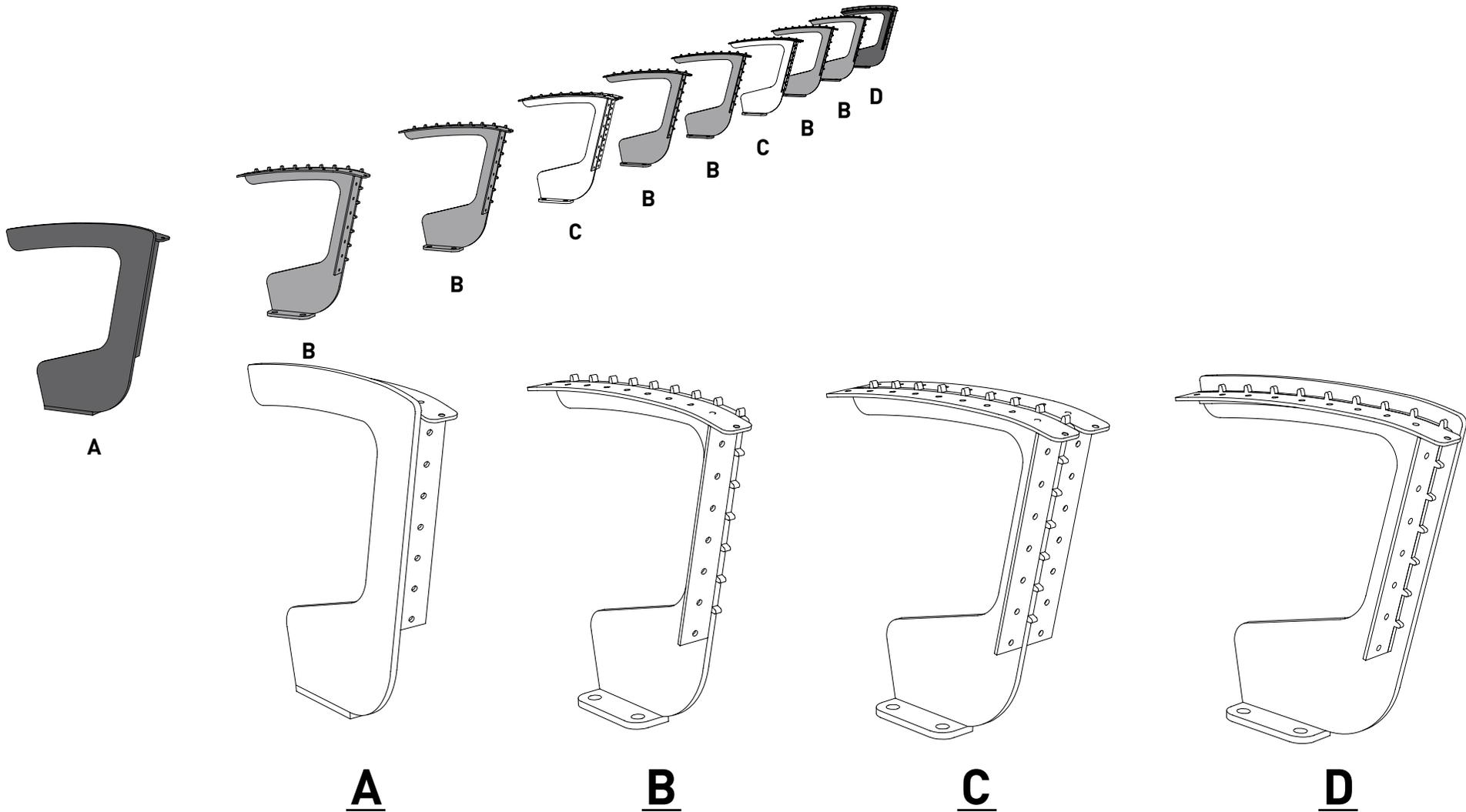
accurate measurement and marking of anchoring holes (follow the LPD anchoring drawings)

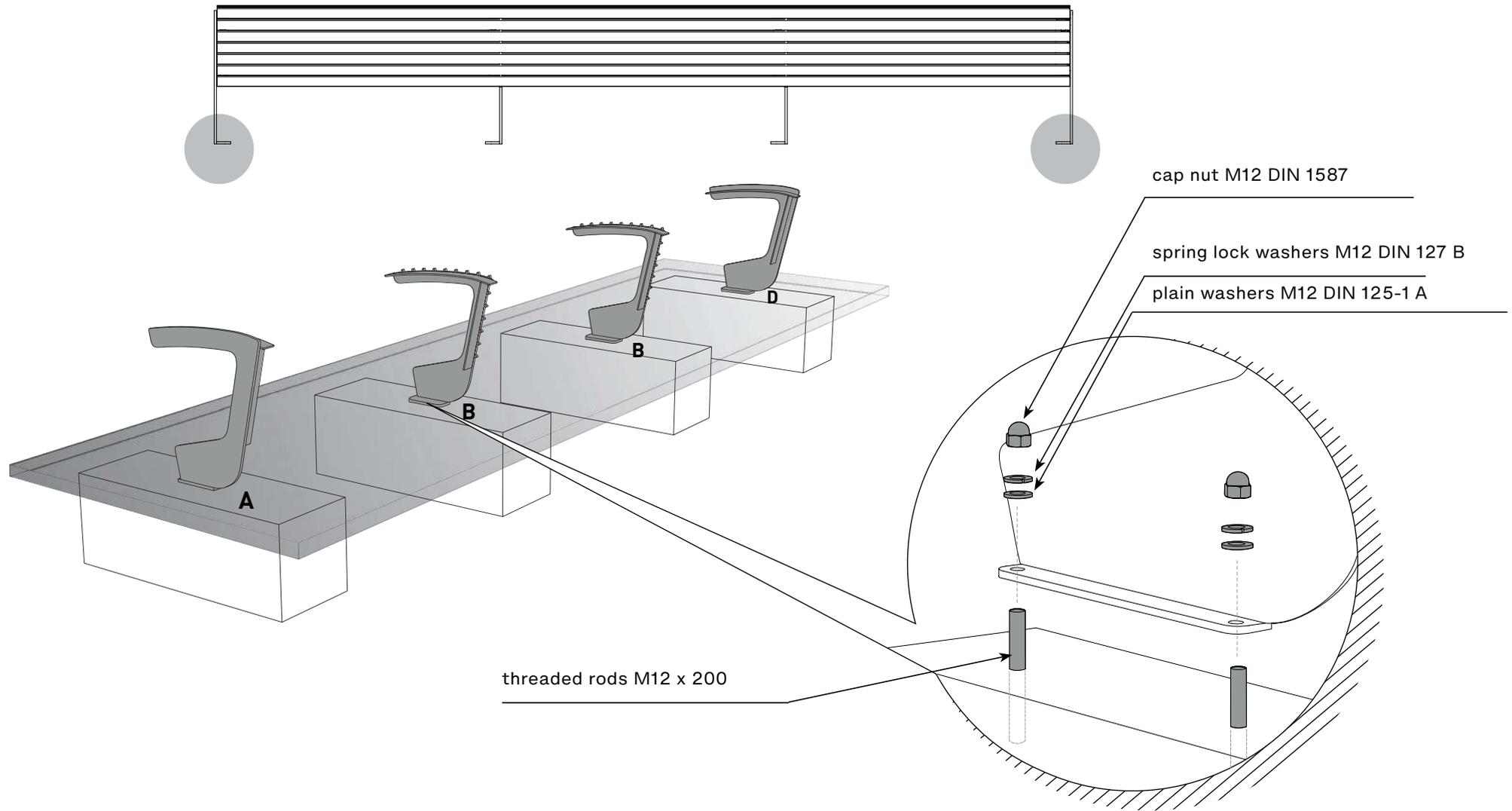


2.0

Steel foot classification according to type / differences

mmcite.com





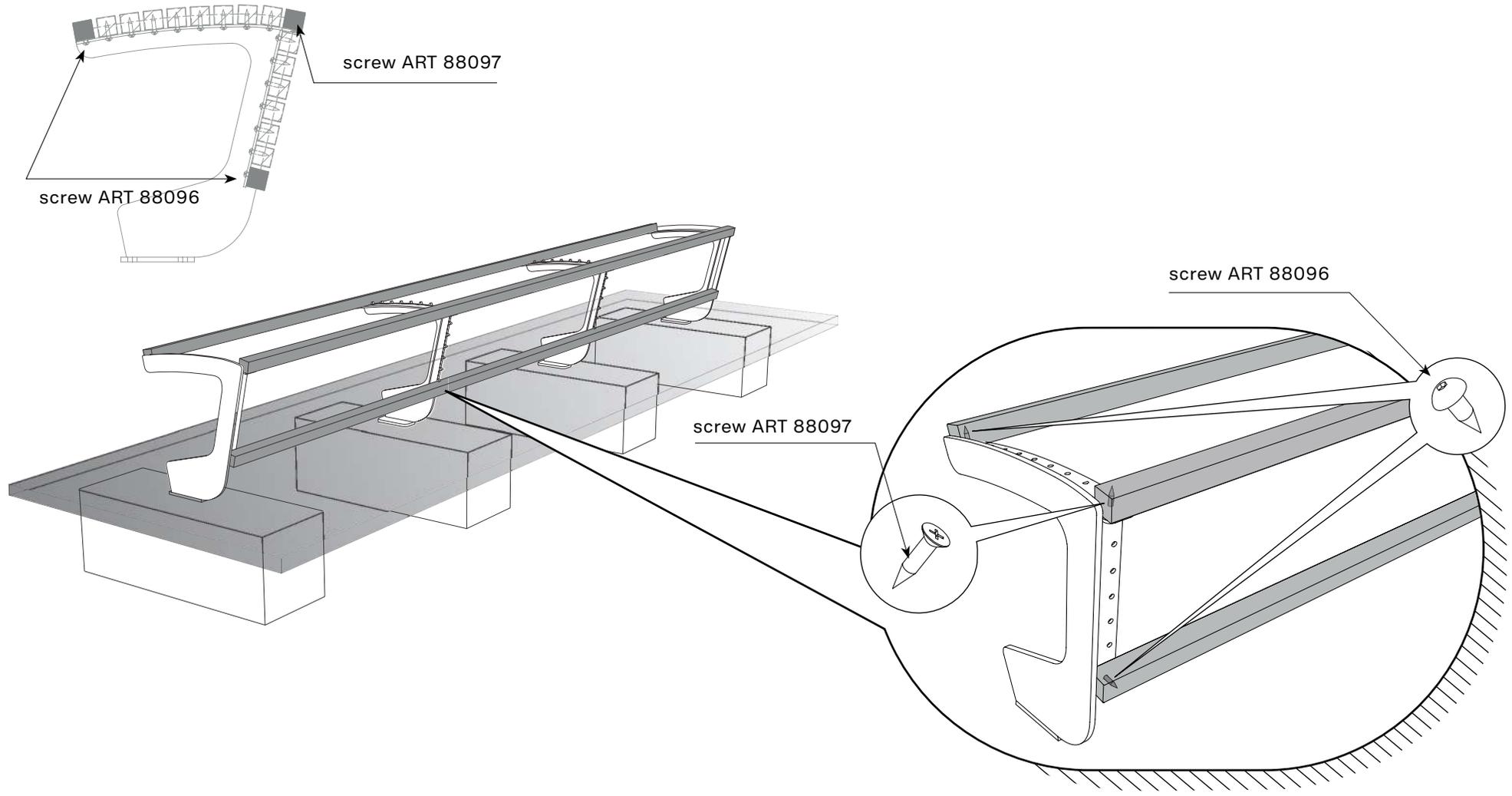
This drawing has only an illustrative character

For more technical details please see the anchoring drawings available on www.mmcite.com

3.0

Installation of wood grate phase 1

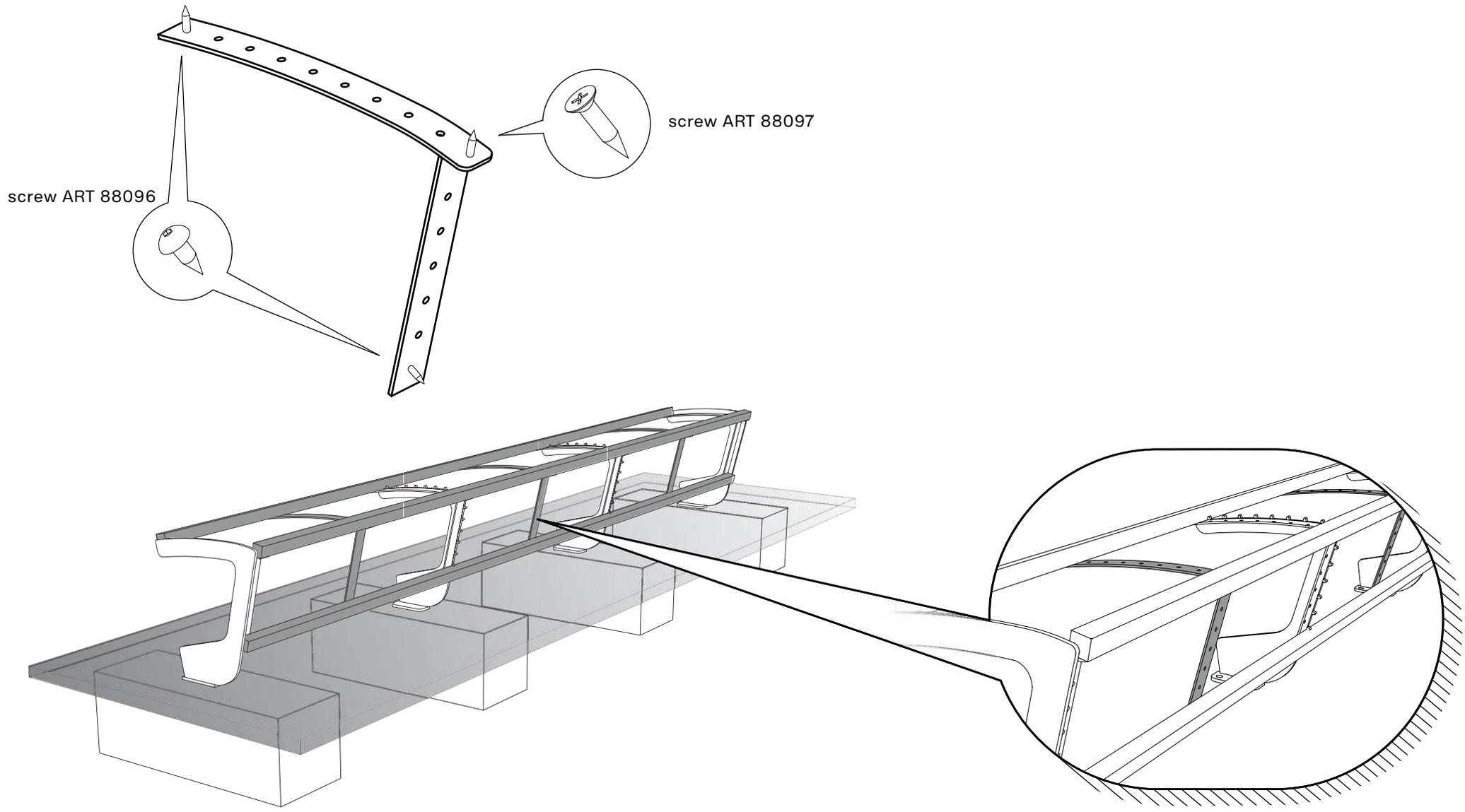
mmcite.com



3.0

Installation of wood grate phase 2 / reinforcement

mmcite.com

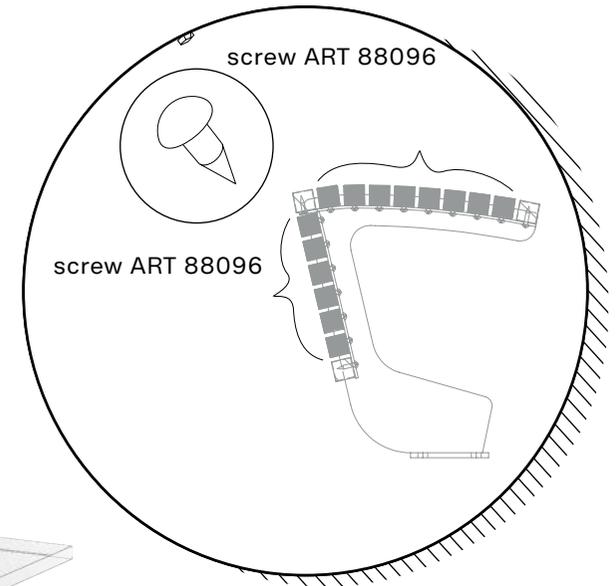
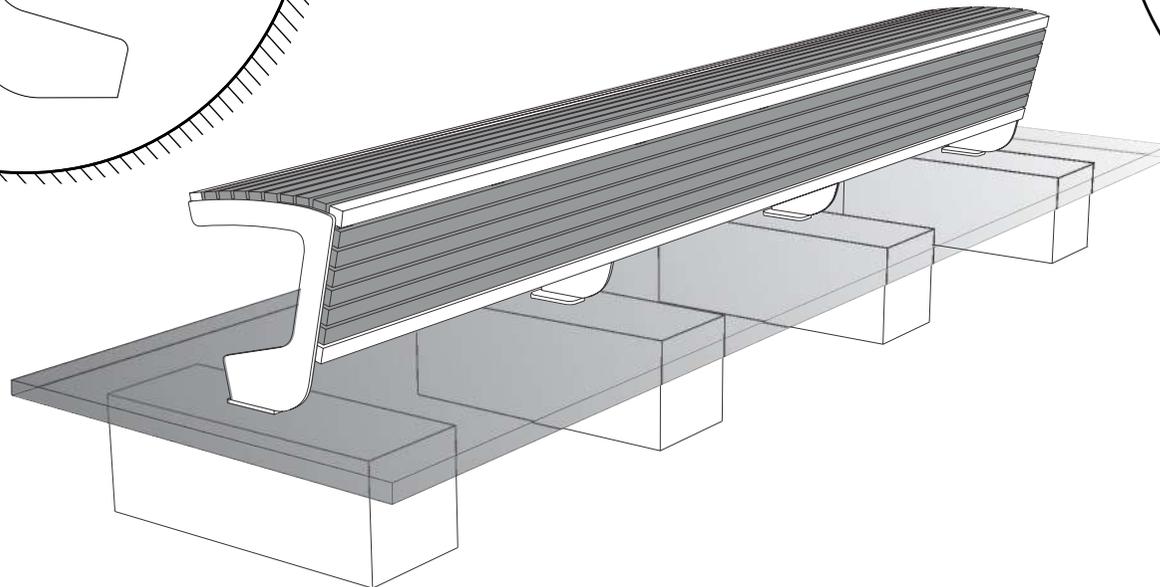
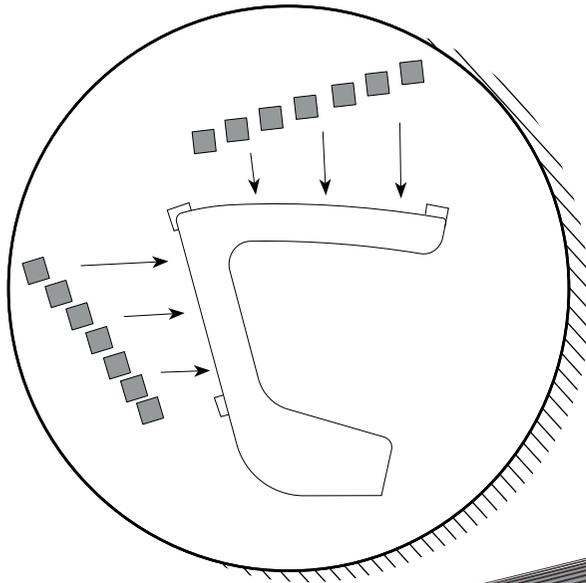


3.0

Installation of wood grate phase 3

mmcite.com

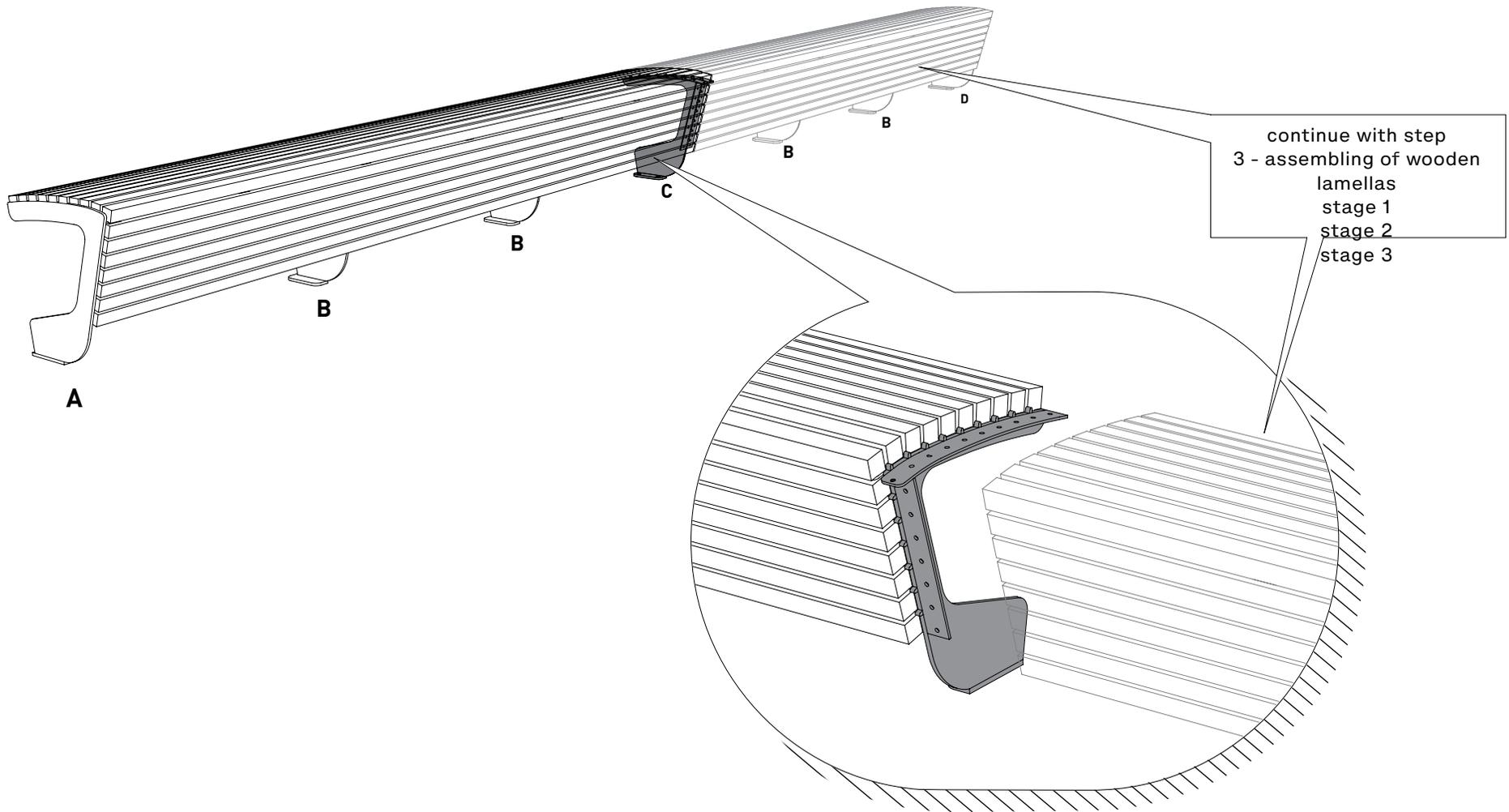
!The assembly of last lamellas is carried out under spatially difficult conditions!

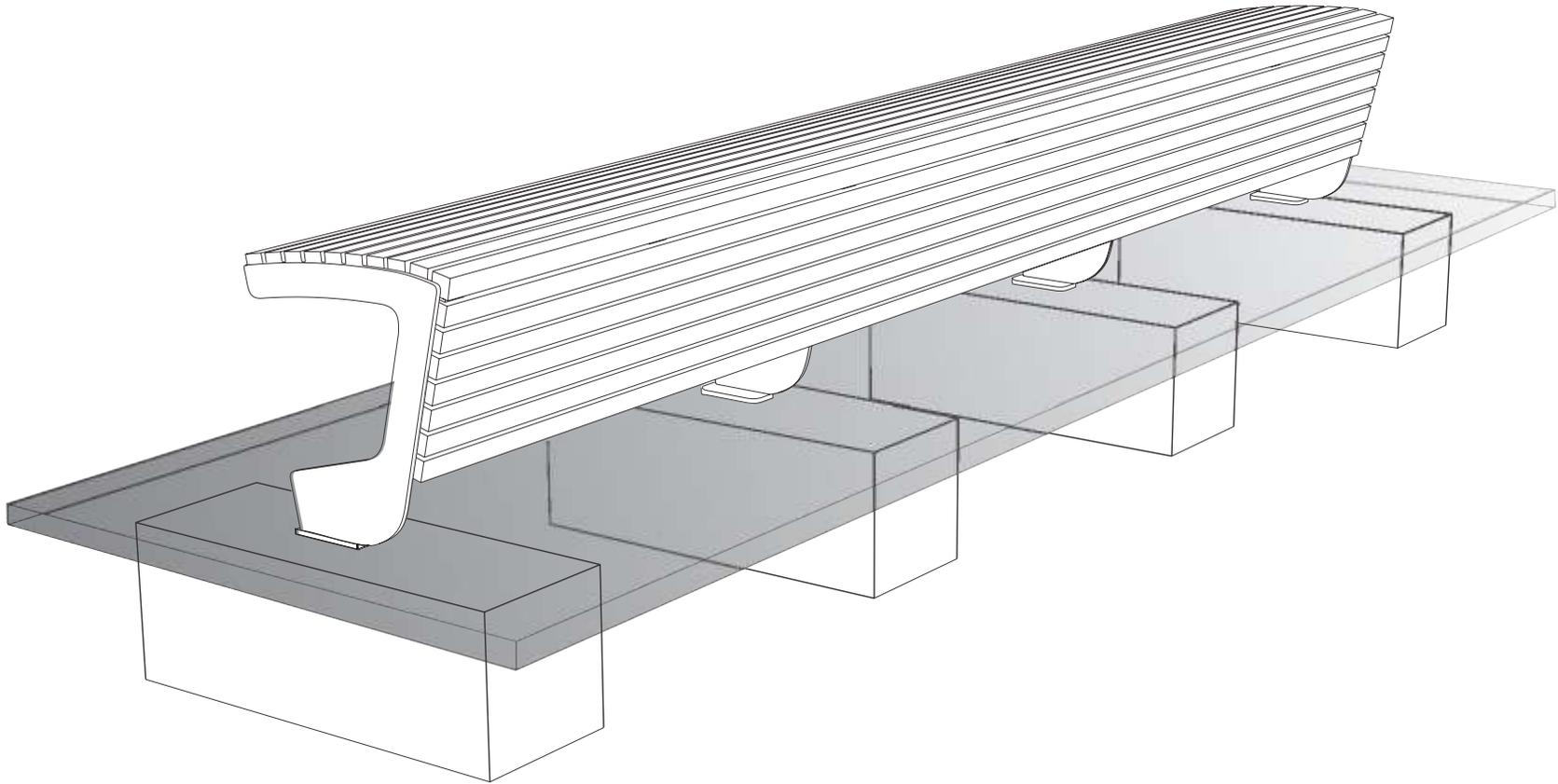


4.0

Installing next segment

mmcite.com

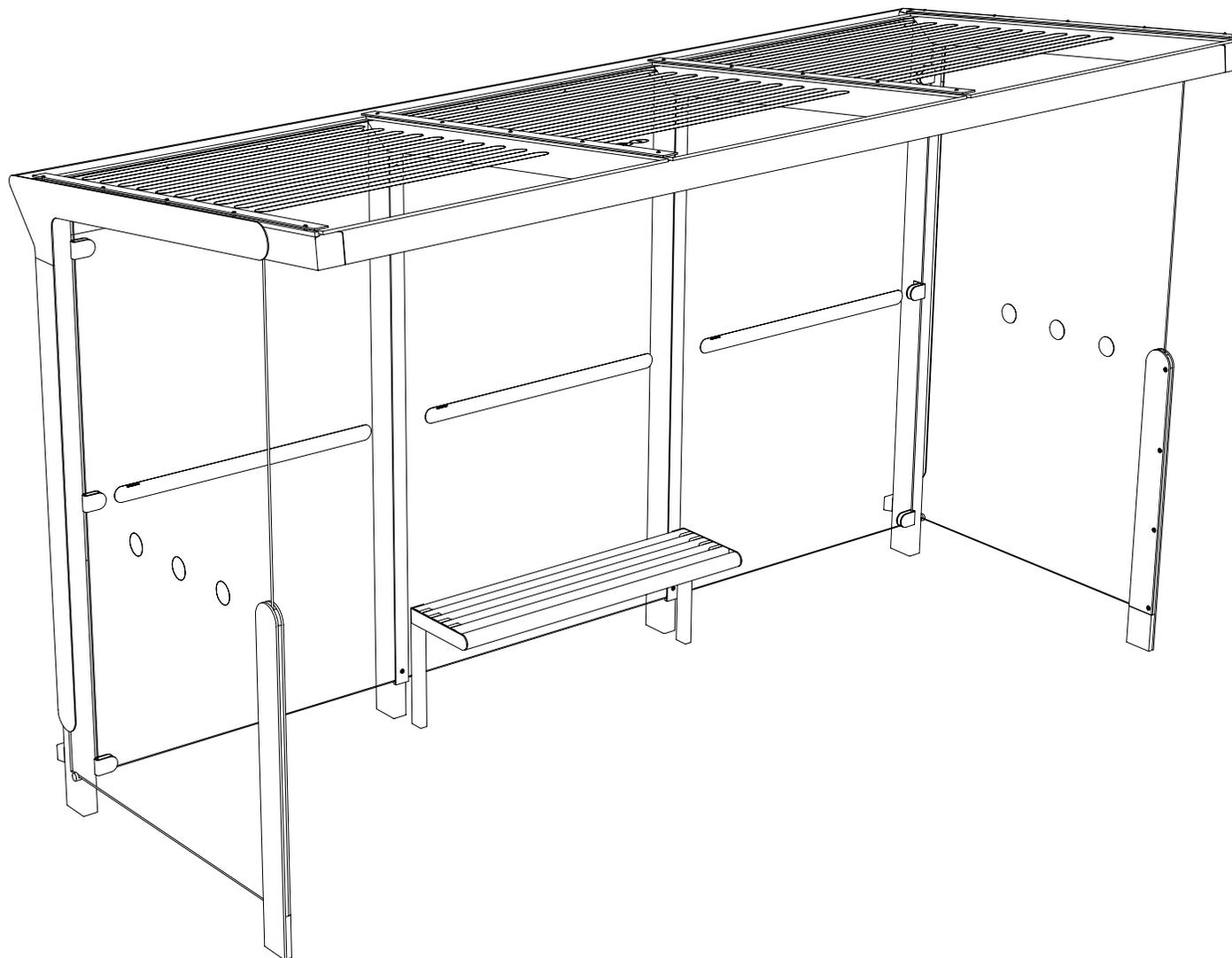




Well done!

Aureo / assembly instructions

mmcite.com



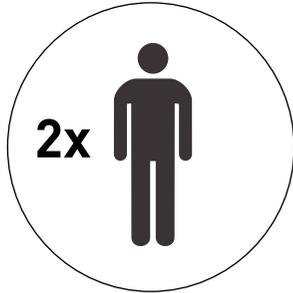
Assembly steps

1. foundation
2. anchoring
3. beam assembly
4. glass assembly
5. seat assembly
6. pavement

Tools

mmcite.com

Workers 2
recommended



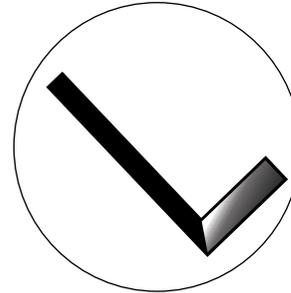
Hammer drill



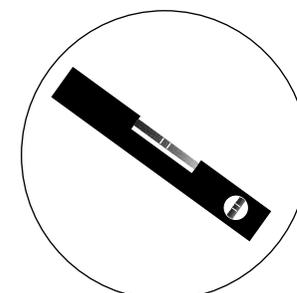
Battery drill



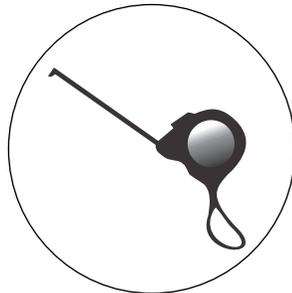
Angle



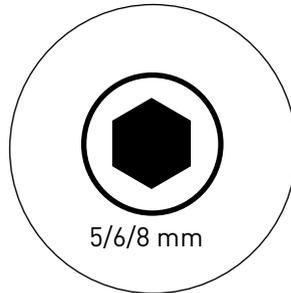
Spirit level



Meter



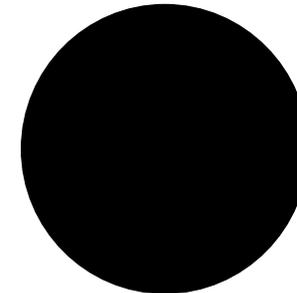
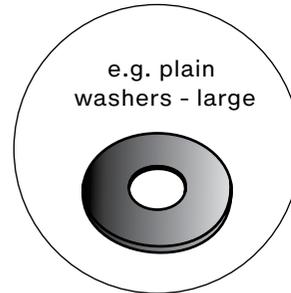
Bit imbus



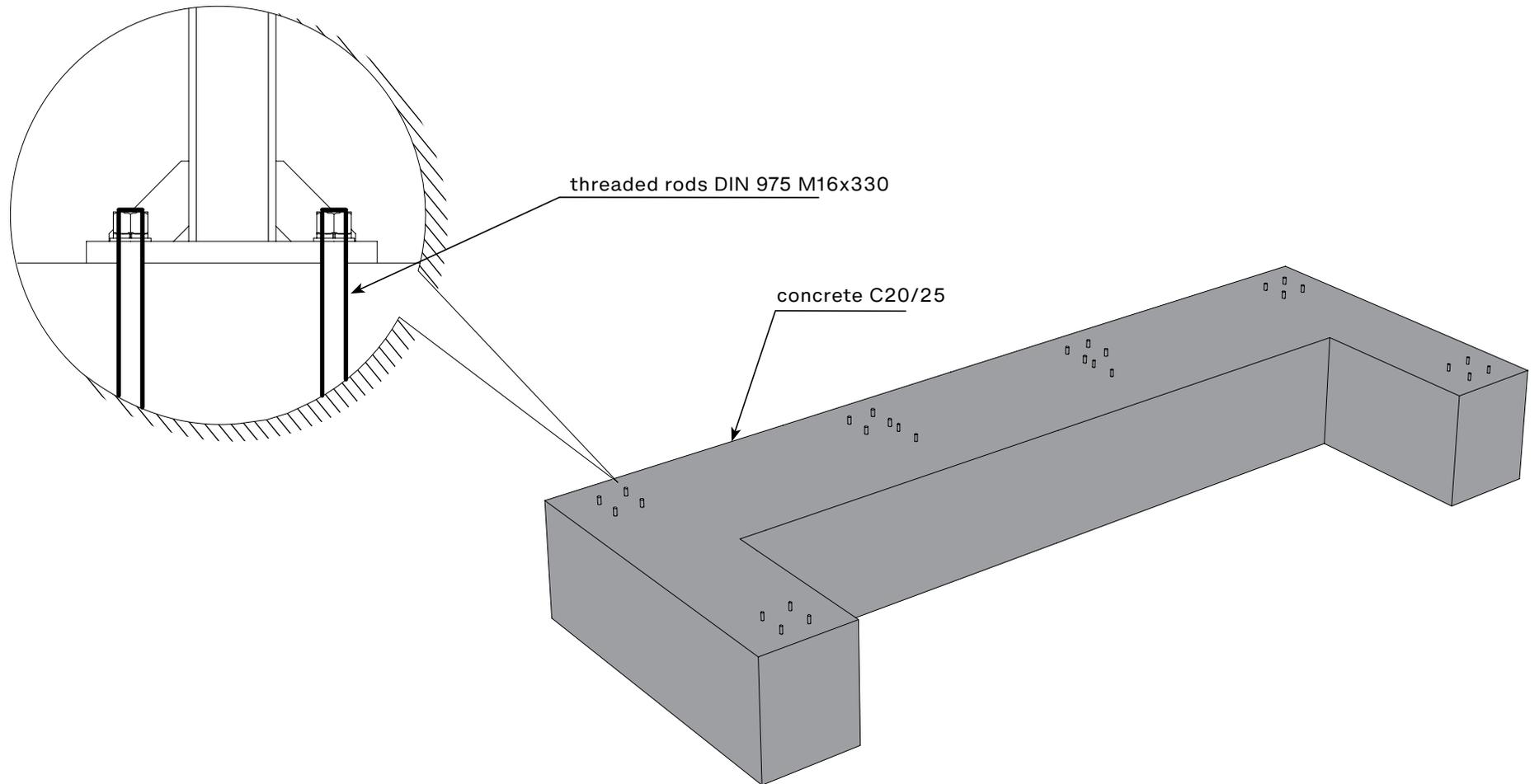
Spanner



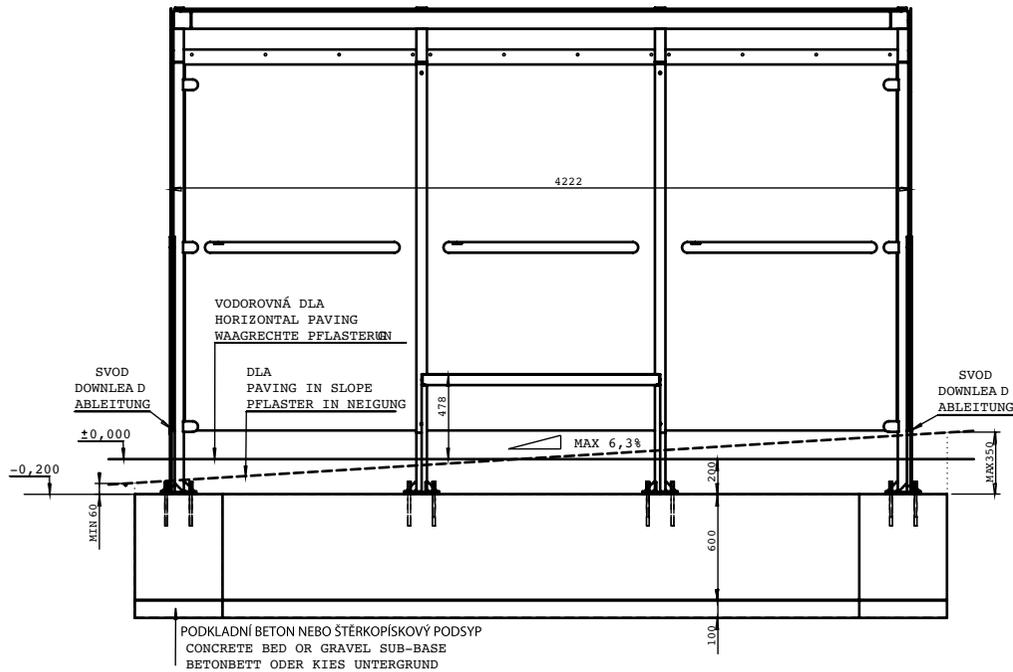
Leveling riser



**!Attention – Measuring and anchoring (distances and angles) have to be extremely accurate!
(see anchoring drawings)**

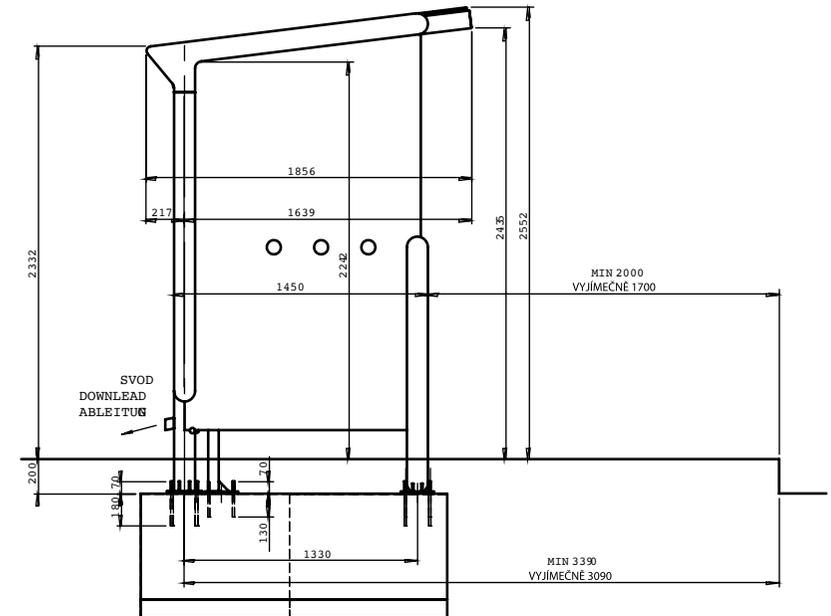
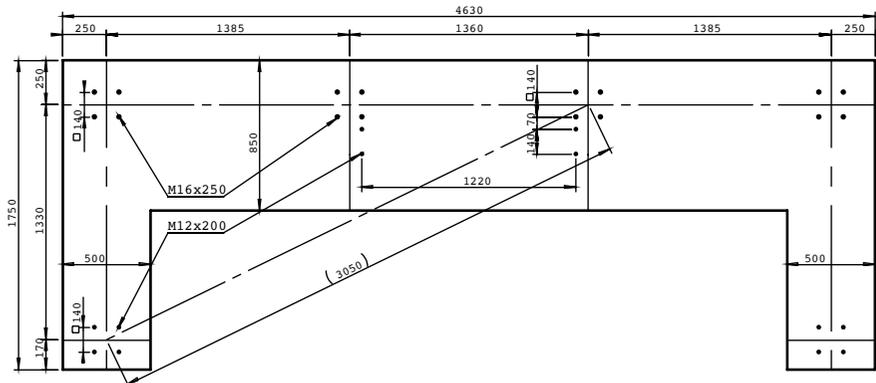


**!Attention – Measuring and anchoring (distances and angles) have to be extremely accurate!
(see anchoring drawings)**



ZÁKLADOVÝ PAS / CONTINUOUS FOOTING / FUNDAMENTSTREIFEN

VARA KUBATURA BETONU / CONCRETE CUBATURE / BETONRAUMINHALT - 2.90m

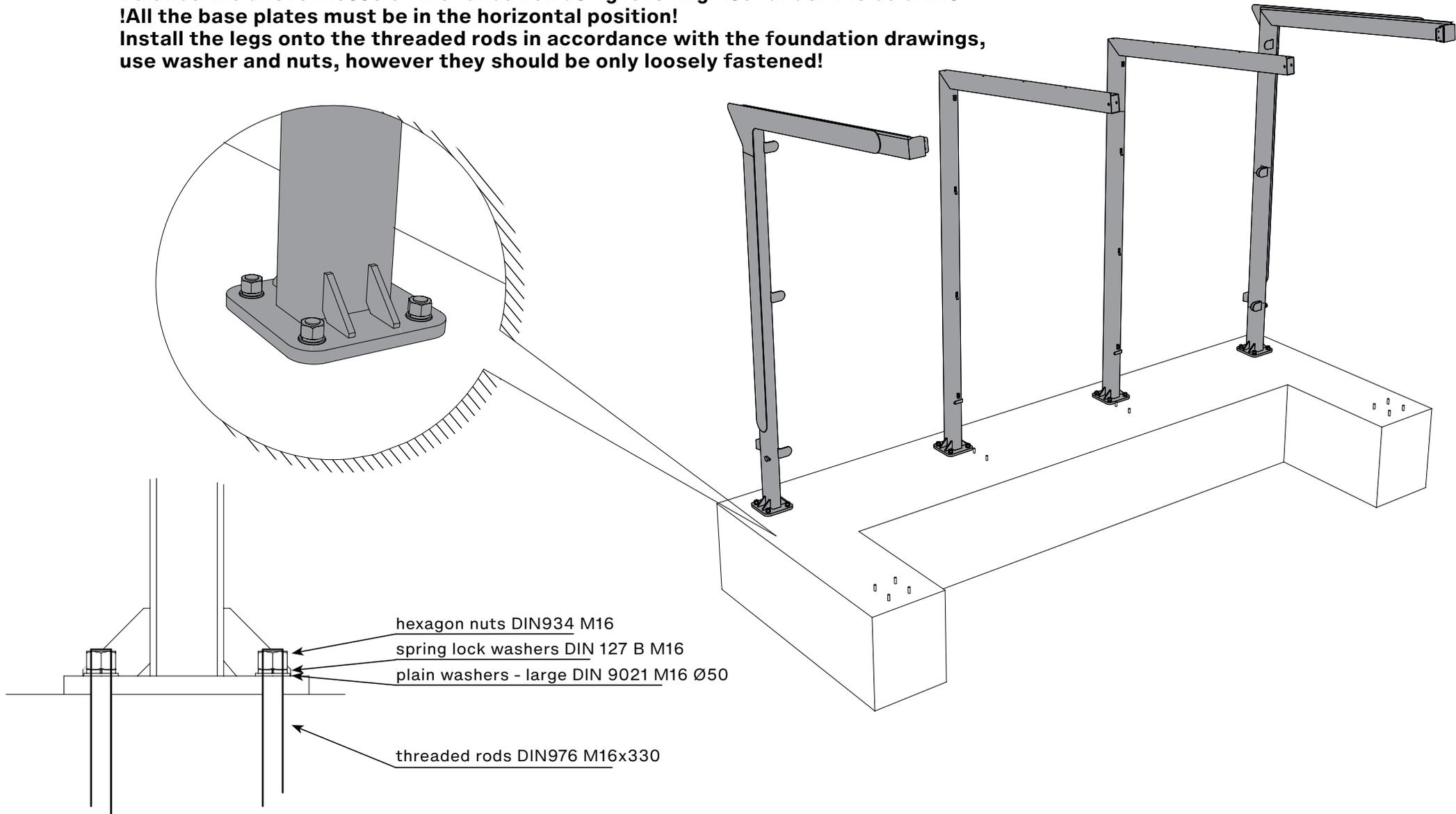


JE TŘEBA DODRŽET KÓTU HORNÍ HRANY BETONOVÉHO ZÁKLADU 200mm POD ÚROVNÍ DLAŽBY VE STŘEDU PŘÍSTŘEŠKU !!
BETON C20/25.
KOTVENO CHEMICKÝMI KOTVAMI DO PŘEDVRTANÝCH A VYČIŠTĚNÝCH OTVORŮ NA CHEMICKOU MALTU (HILTI HIT-HY 150 NEBO SROVNATELNÁ).
PRŮMĚR VRTANÉHO OTVORU JE O 2mm VĚTŠÍ NEŽ PRŮMĚR KOTVY. KOTVY VYČNÍVAJÍ 70mm NAD BETONOVÝ ZÁKLAD.

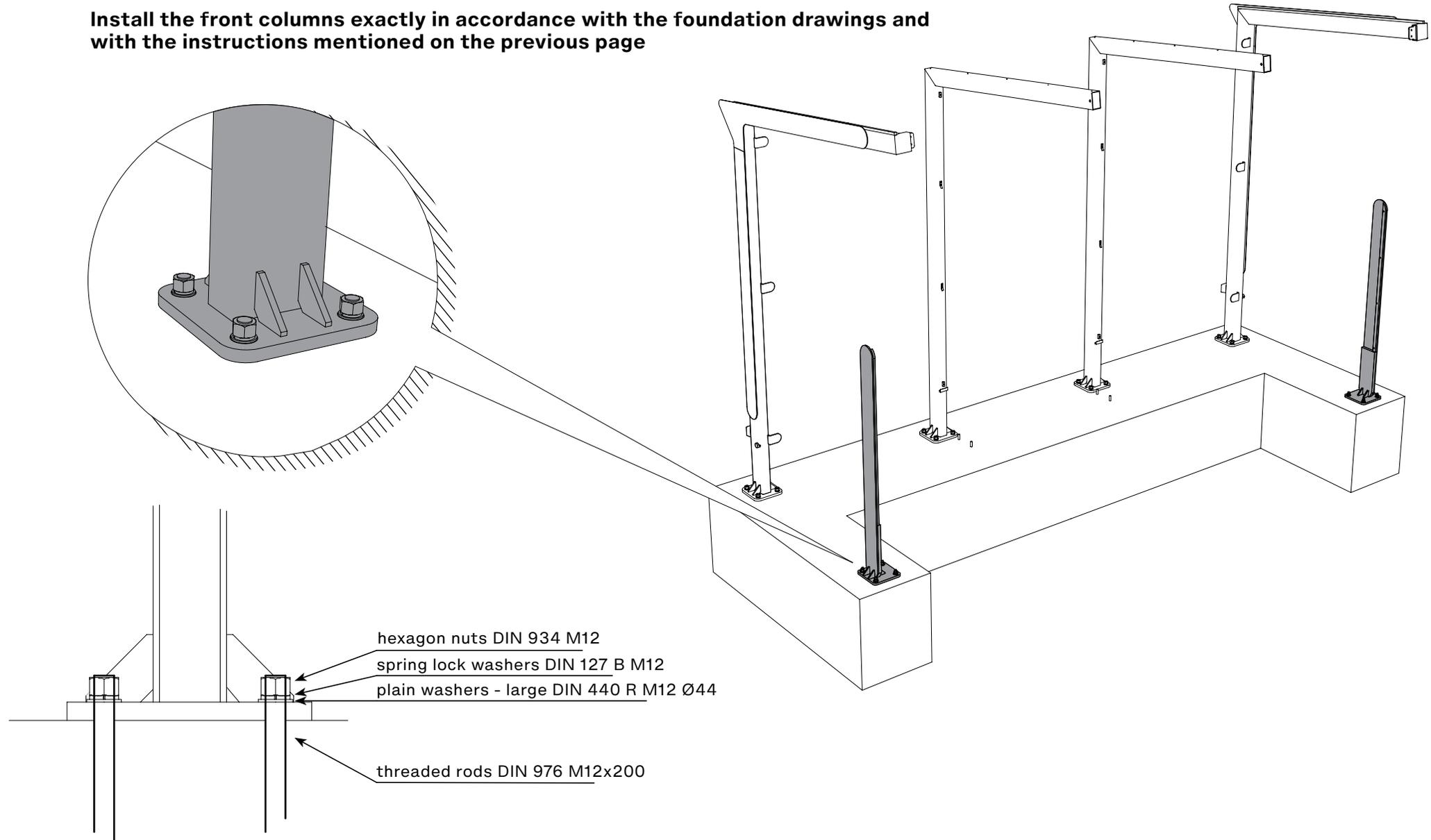
IT IS TO BE TO KEEP THE SPOT HEIGHT OF THE UPPER EDGE OF CONCRETE BASE 200mm UNDER PAVING LEVEL IN THE MIDDLE OF THE SHELTER !! CONCRETE C20/25.
ANCHORED BY CHEMICAL ANCHOR TO PRE-DRILLED AND CLEAN HOLES ON THE CHEMICAL MORTAR (HILTI HIT-HY 150 OR COMPARABLE).
DIAMETER OF THE DRILLED HOLE IS 2mm BIGGER THAN DIAMETER OF ANCHOR. ANCHORES STAND OUT 70mm ABOVE THE CONCRETE BASE.

ES IST DAS MASS DER OBEREN BETONFUNDAMENTKANTE 200mm UNTER DER PFLASTEREBENE IN DER BEDACHUNGSMITTE EINZUHALTEN !! BETONKLASSE C20/25.
GEANKERT MIT CHEMISCHEN ANKERN IN VORGEBOHRTEN UND GEREINIGTEN ÖFFNUNGEN FÜR CHEMISCHEN MÖRTEL FESTGELEGT (HILTI HIT-HY 150 ODER GLEICHWERTIG).
DER DURCHMESSER DER GEBÖHRTEN ÖFFNUNG IST UM 2mm GRÖSSER ALS ANKERDURCHMESSER . DIE ANKER STEHEN DEM BETONFUNDAMENT 70mm ÜBER.

Check the level of the uppersurface of the concrete foundation - find the highest point
Balance the unevenness of the foundation using levelling riser under the columns
!All the base plates must be in the horizontal position!
Install the legs onto the threaded rods in accordance with the foundation drawings,
use washer and nuts, however they should be only loosely fastened!



Install the front columns exactly in accordance with the foundation drawings and with the instructions mentioned on the previous page



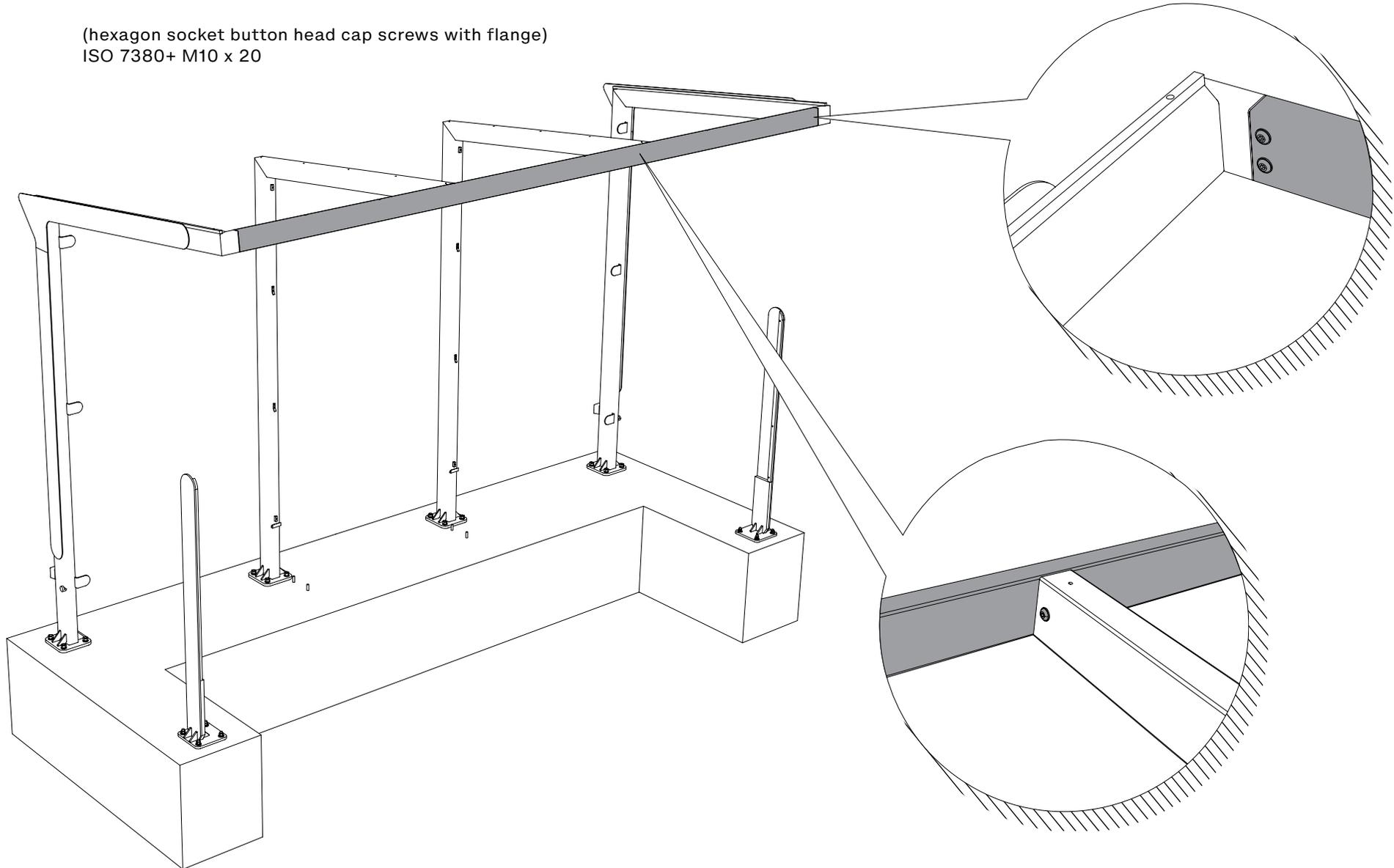
3.0

Beam assembly

mmcite.com

Set the angles of all columns
Install the front beam

(hexagon socket button head cap screws with flange)
ISO 7380+ M10 x 20

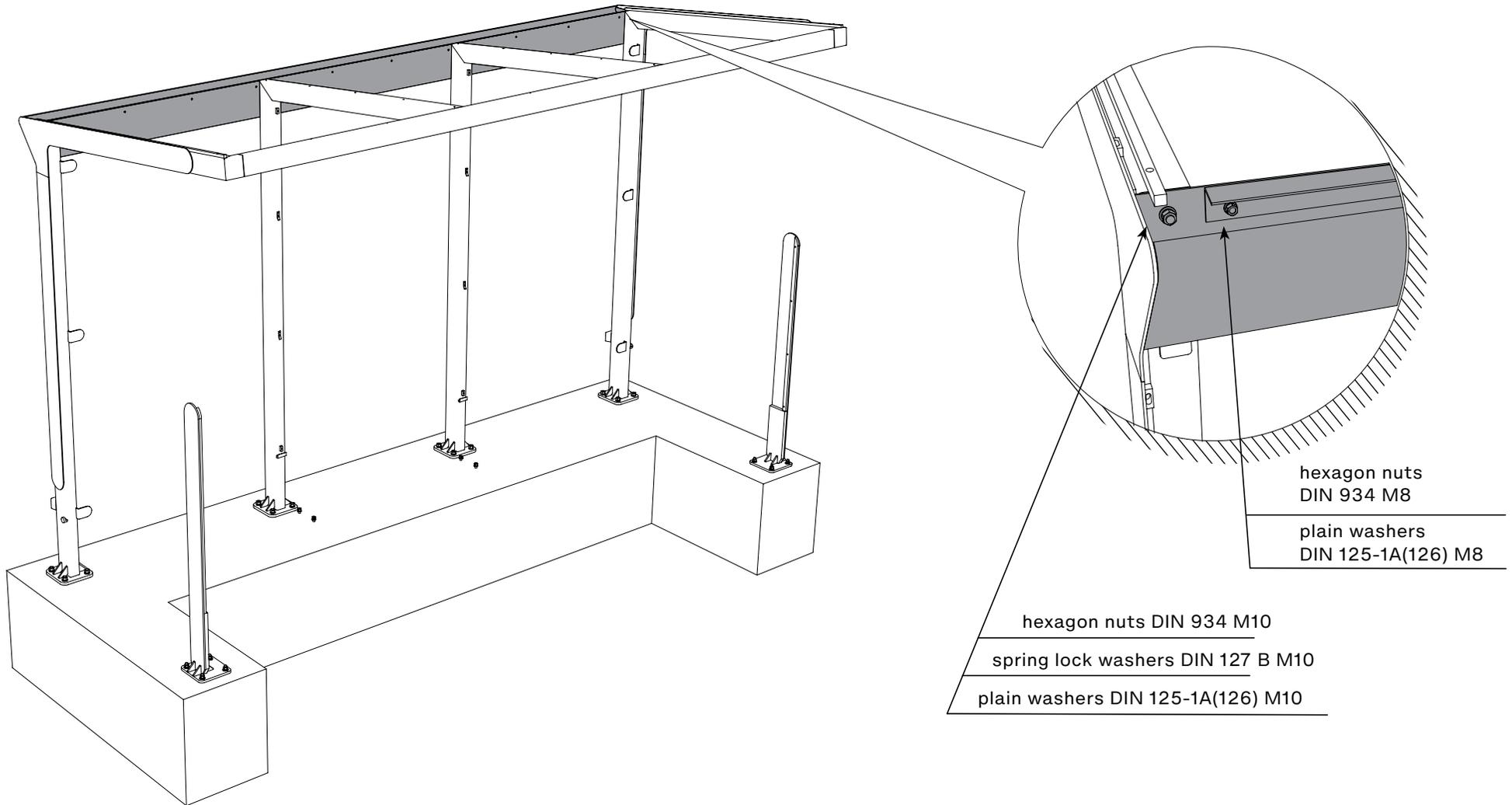


3.0

Gutter assembly

mmcite.com

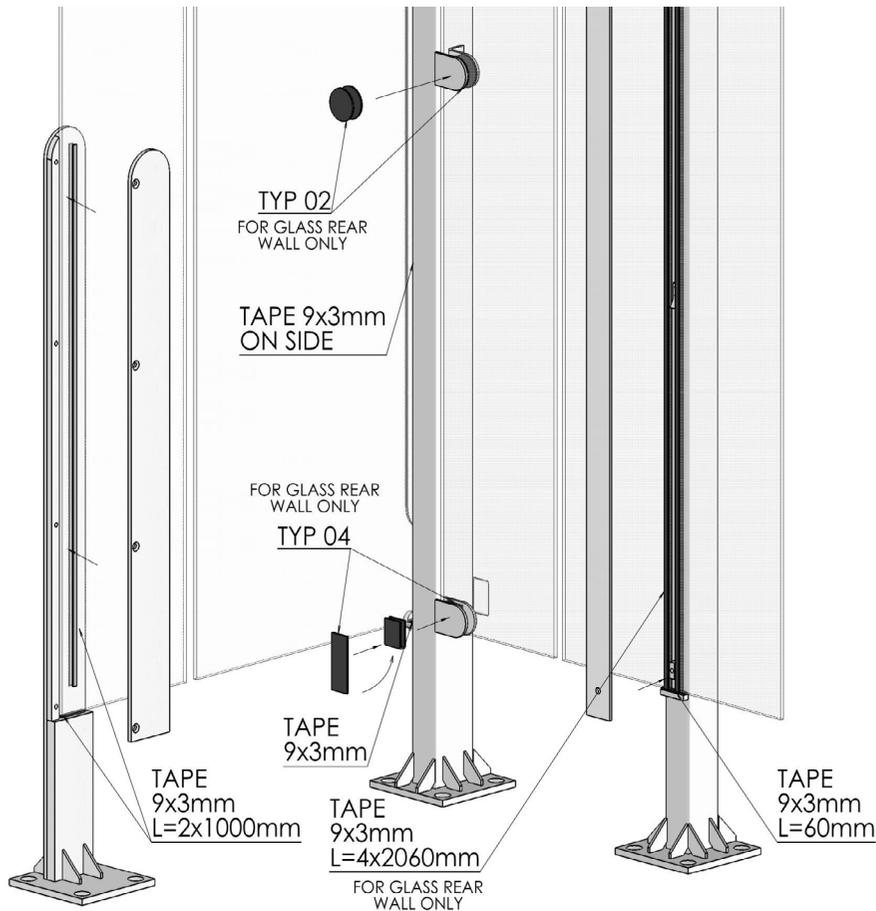
Install the gutter



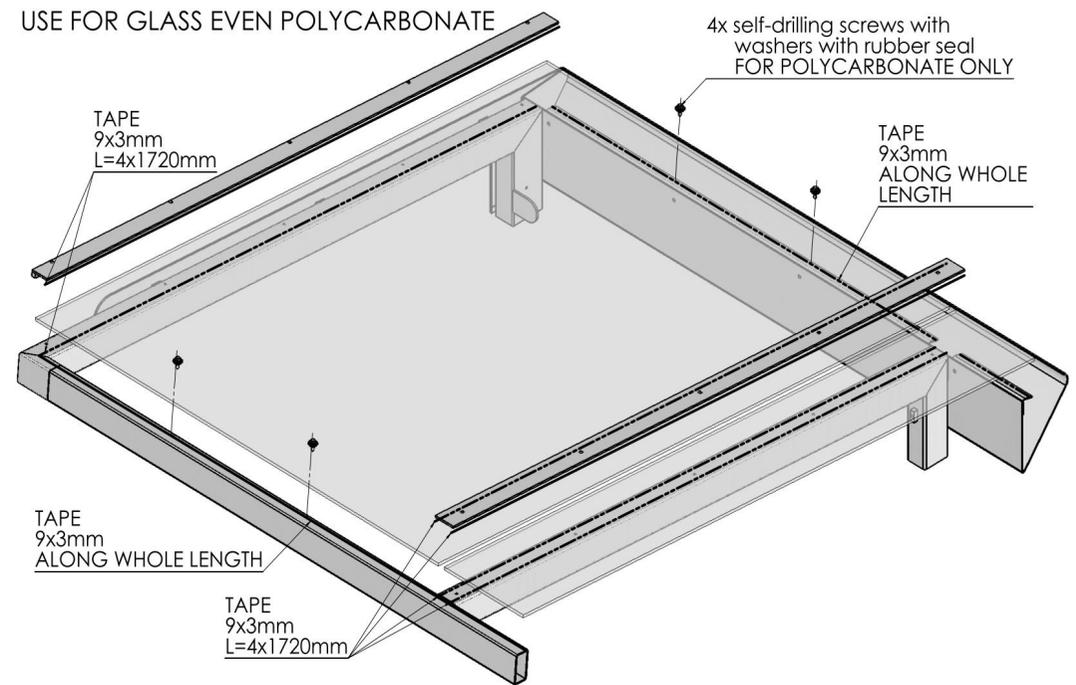
Further, straighten all the columns into the vertical position and begin carefully fastening nuts on base plates, while making sure the columns are perfectly vertical

Prior to the glazing, rubber seal should be added on the places where steel structure touches the glass panels

Place rubber seal on the walls and into the glass panels holders



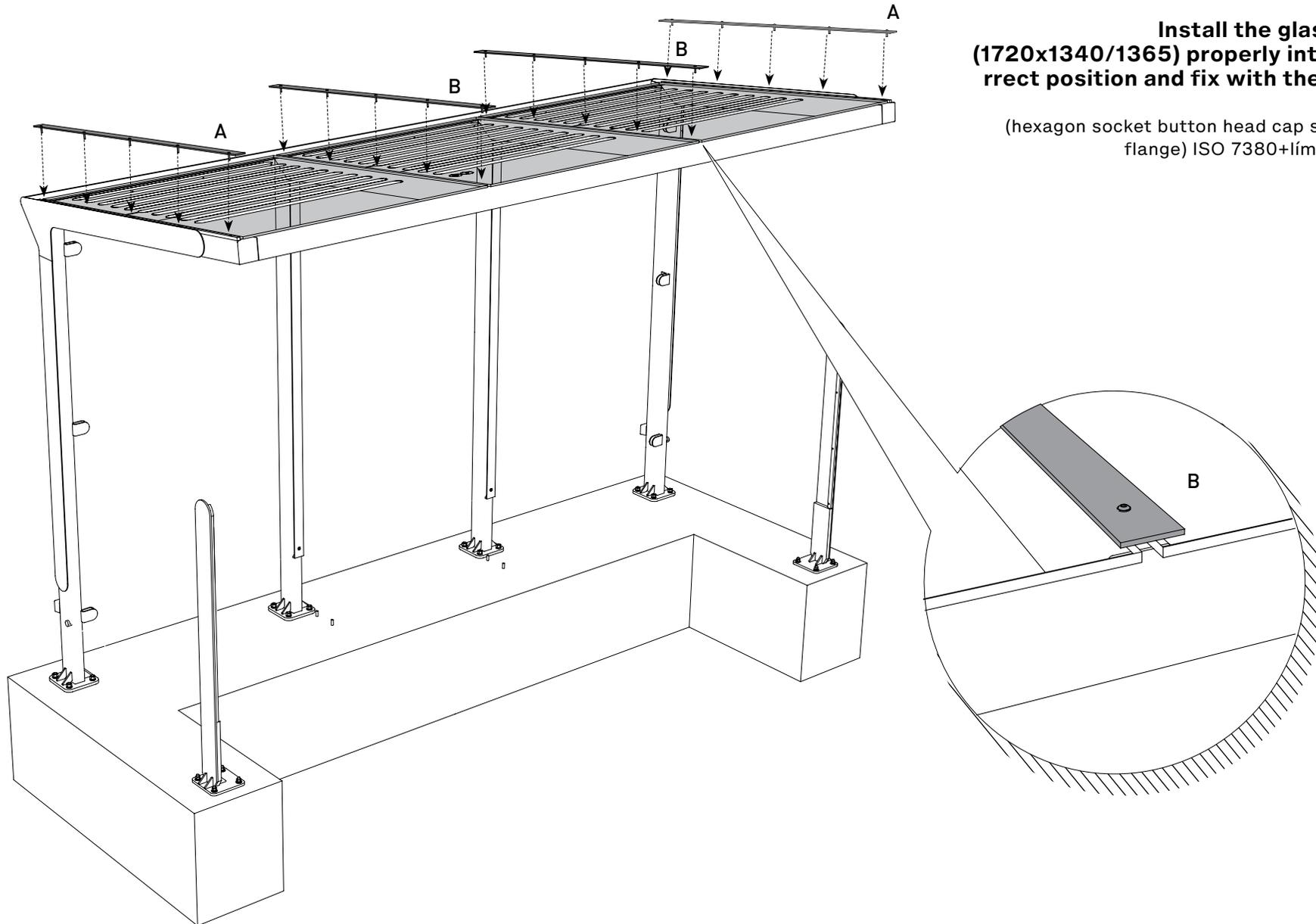
Insert rubber seal on the roof



4.0

Glass assembly

mmcite.com

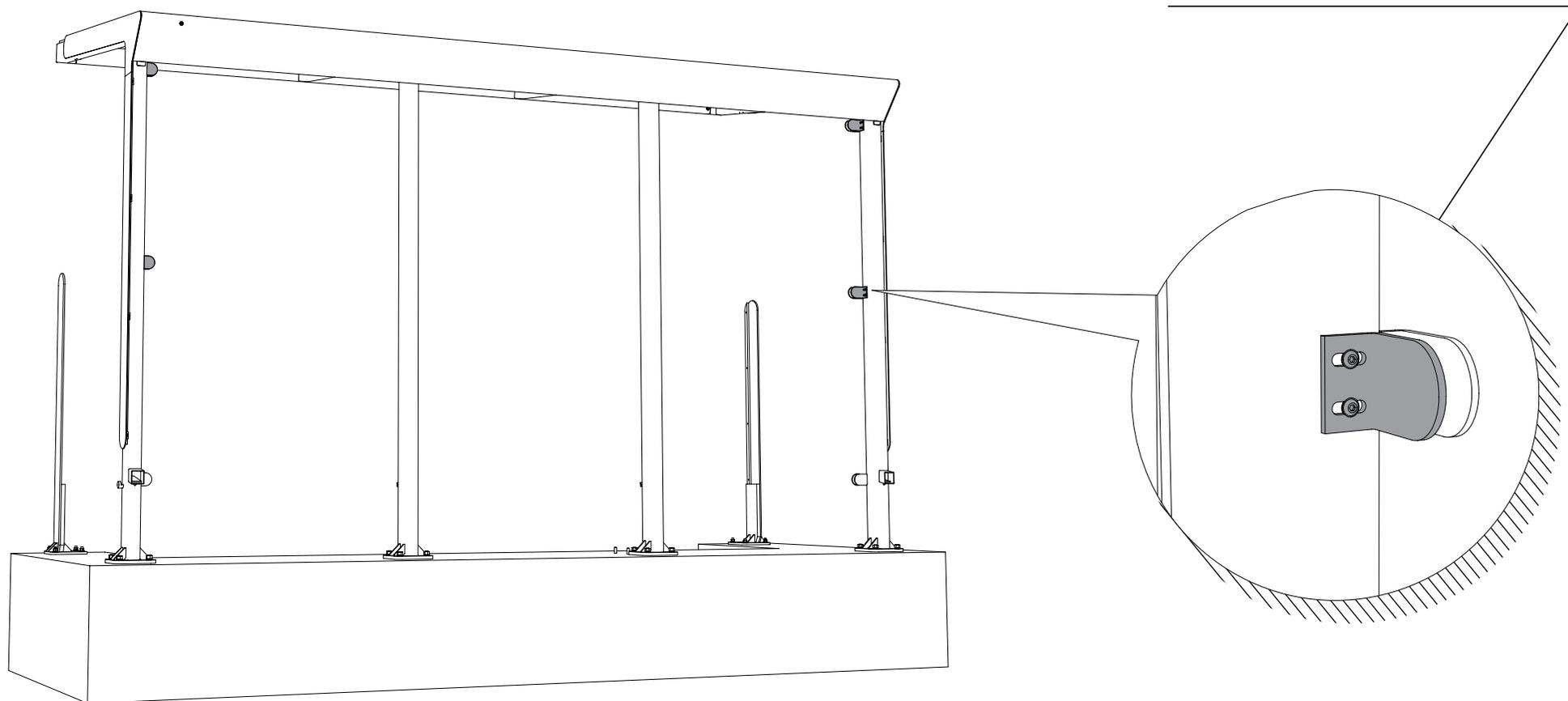


**Install the glass panels
(1720x1340/1365) properly into the co-
rrect position and fix with the roof bar**

(hexagon socket button head cap screws with
flange) ISO 7380+límec M6 x 30

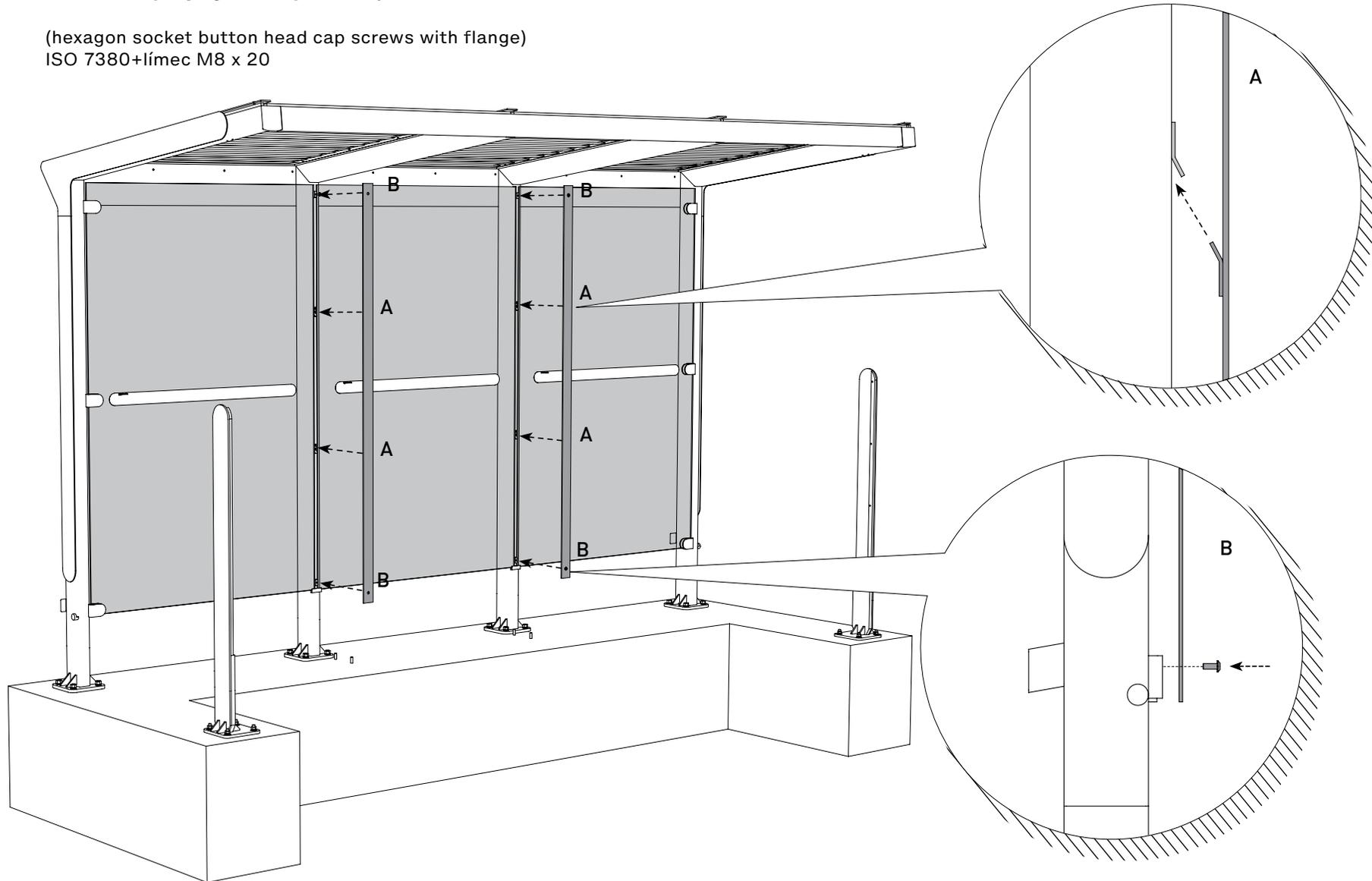
Check the glass panel holders and unscrew the holders from the steel structure (they are screwd onto the columns only for transport purposes)

hexagon socket button head cap screwa with flange
ISO 7380+límecc M6 x 12



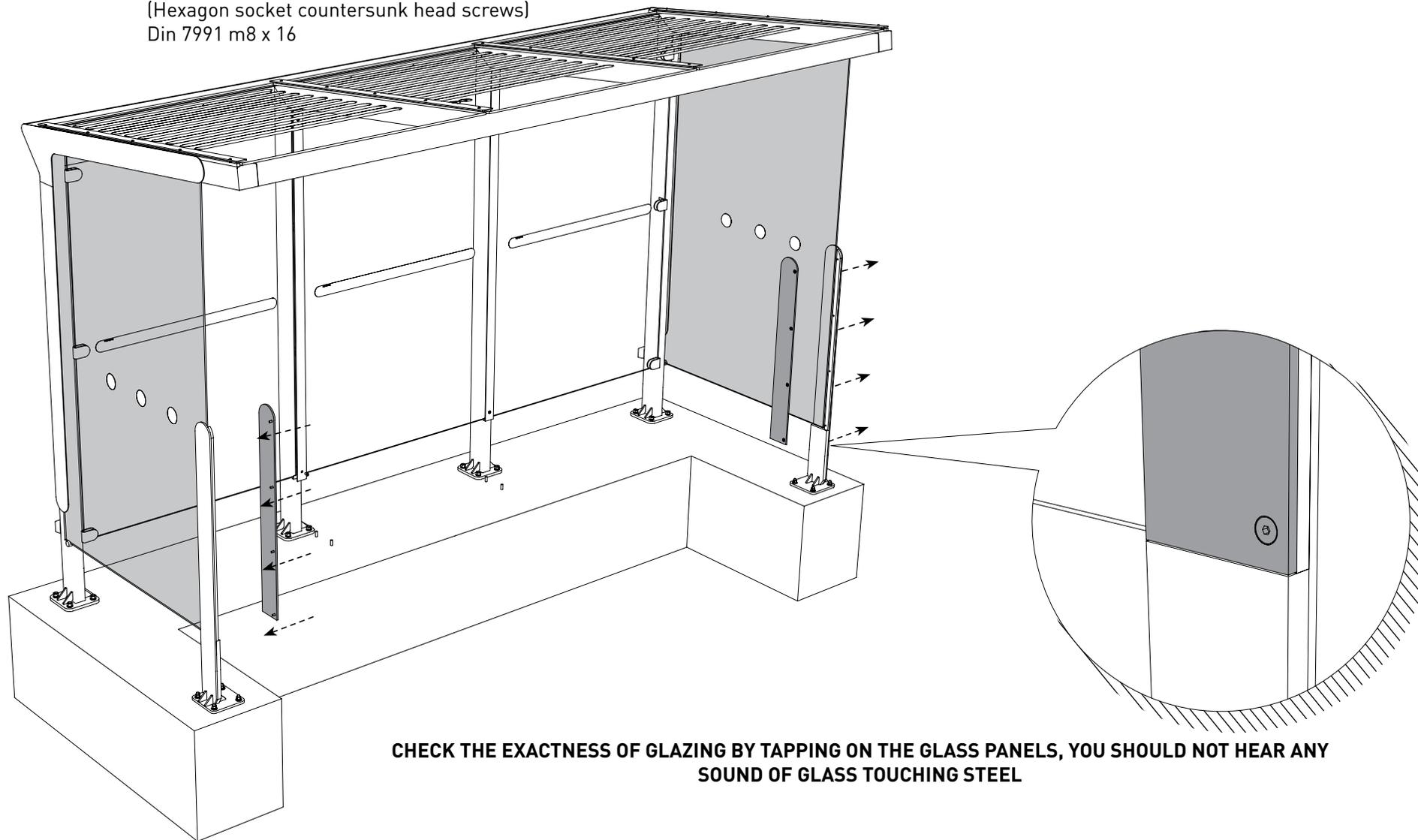
**Place the glass panels (2070x1340) into the glass holders,
With serigraphy facing inside, and fix with the rear bar and holders**

(hexagon socket button head cap screws with flange)
ISO 7380+límecc M8 x 20



Place the side glass panels (2302x1350) between the steel structure and side steel I-shaped part, with serigraphy facing inside, and fix with the bar (the front column)

(Hexagon socket countersunk head screws)
Din 7991 m8 x 16



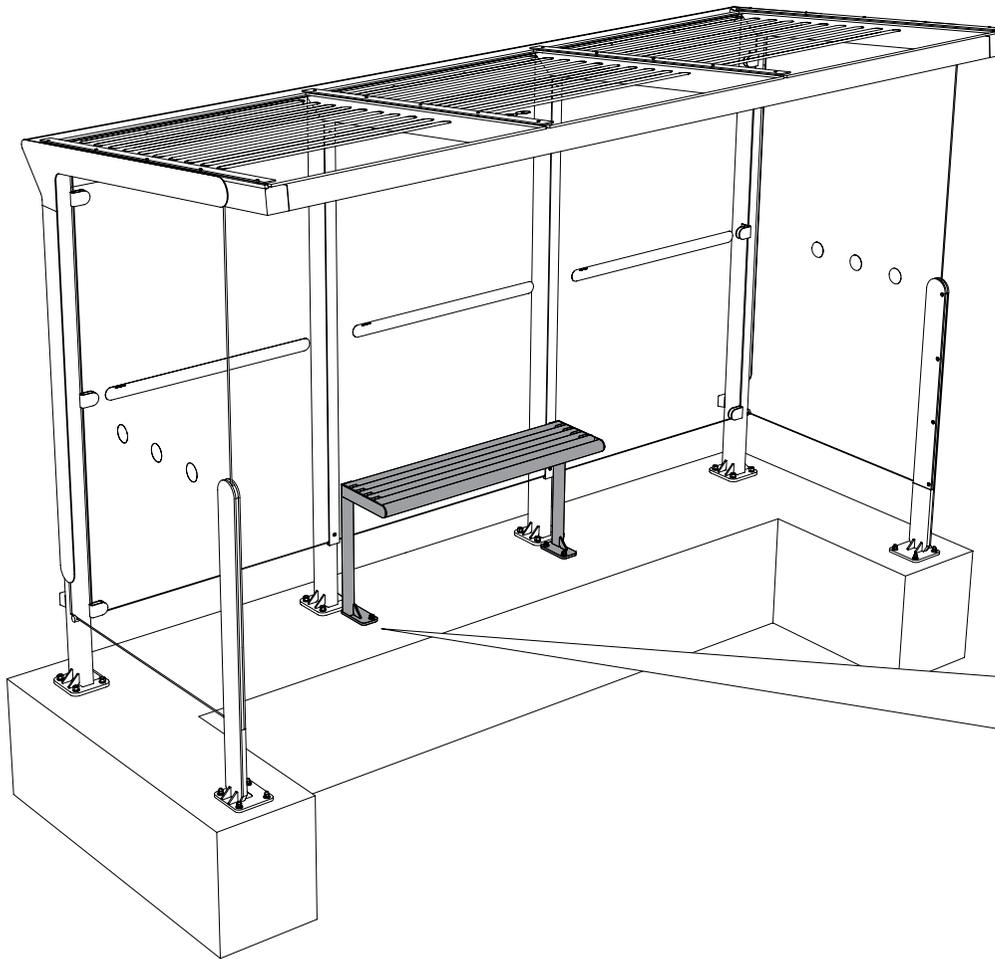
CHECK THE EXACTNESS OF GLAZING BY TAPPING ON THE GLASS PANELS, YOU SHOULD NOT HEAR ANY SOUND OF GLASS TOUCHING STEEL

5.0

Seat assembly

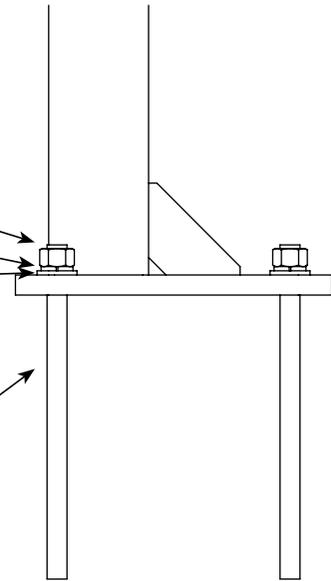
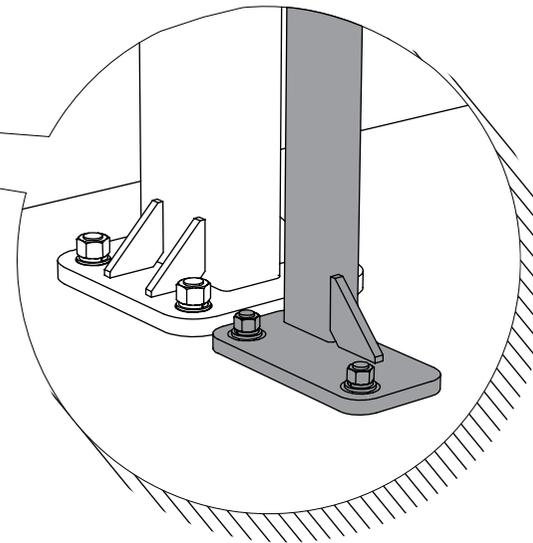
mmcite.com

Install the bench

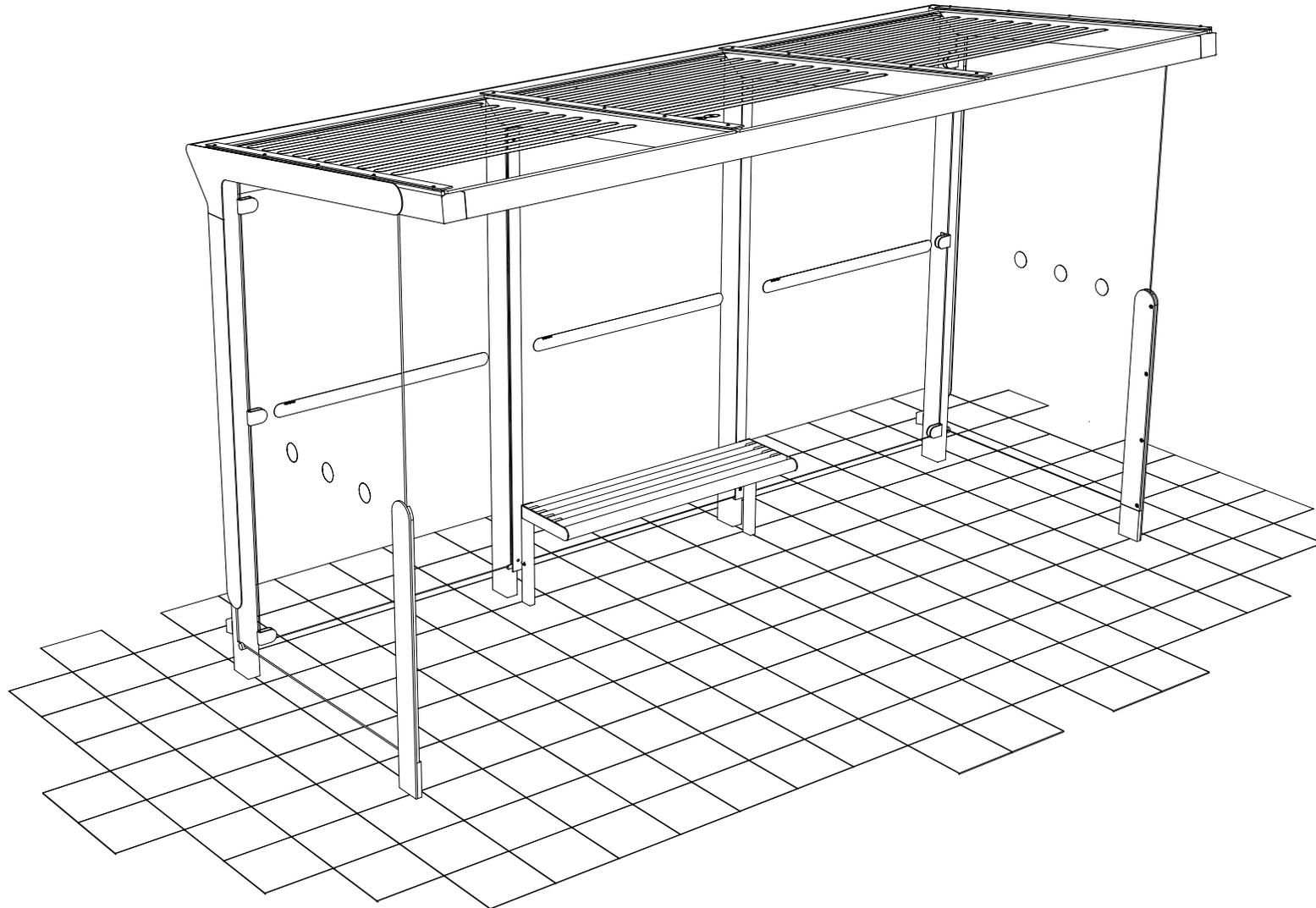


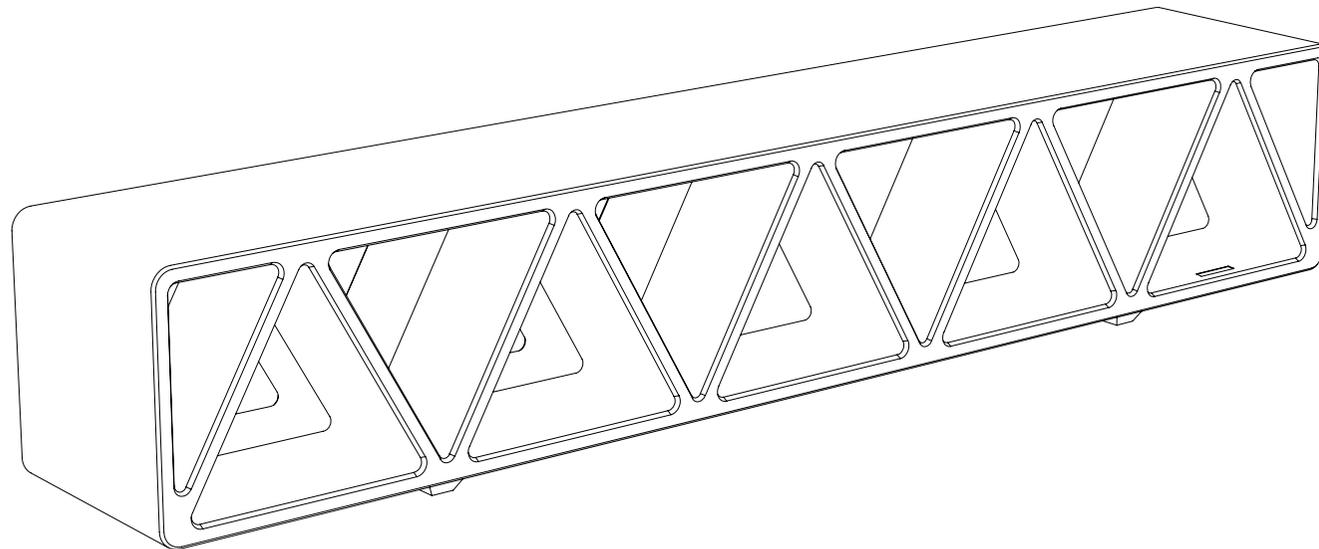
hexagon nuts DIN 934 M12
spring lock washers DIN 127 B M12
plain washers - large DIN 440 R M12 Ø44

threaded rods DIN 976 M12x200



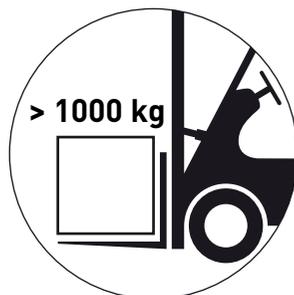
Pave the sidewalk surface





1. Foundations
2. Manipulations
3. Finishing

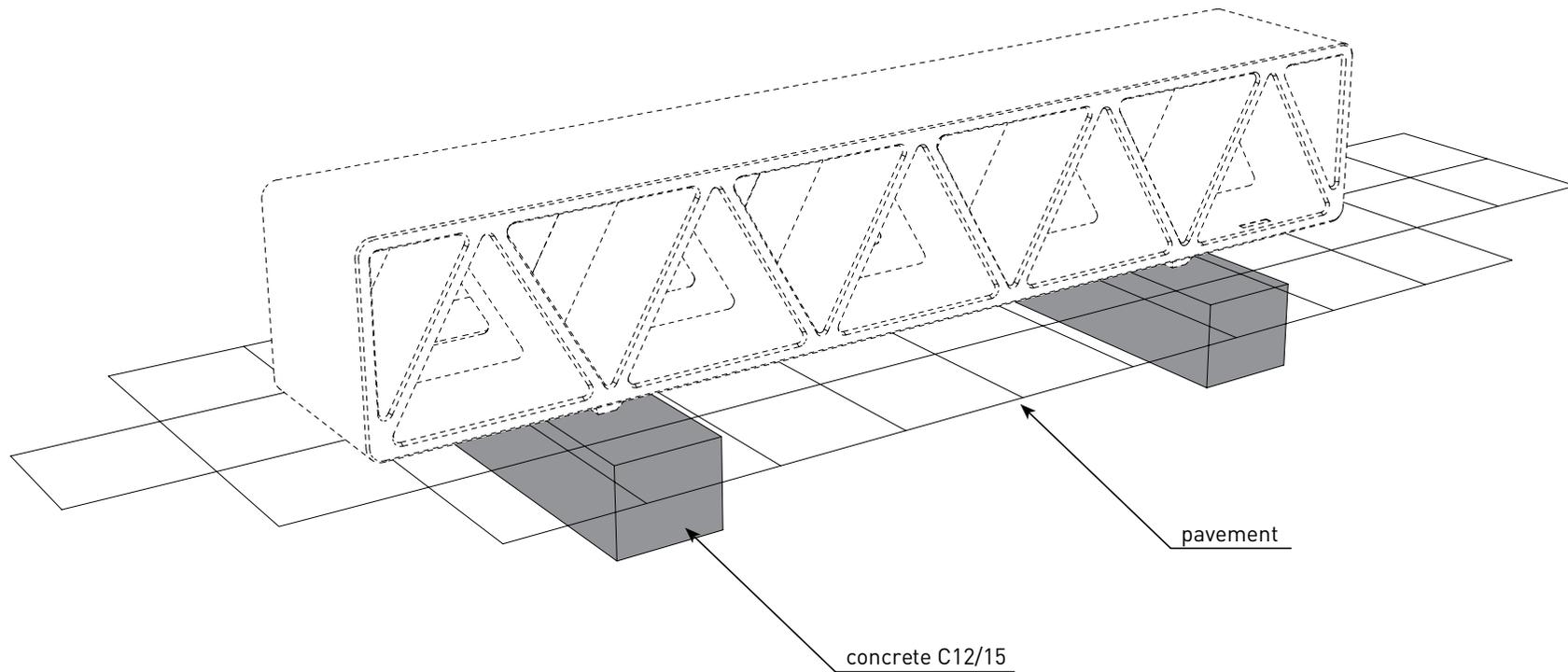
*workers
recommended*



!ATTENTION!
CONSTRUQTA BENCH IS EXTREMELY HEAVY AND LIFTING EQUIPMENT IS REQUIRED.
CONSIDER TERRAIN AND SPATIAL CONDITIONS OF LOCATION.

1.0

Foundations

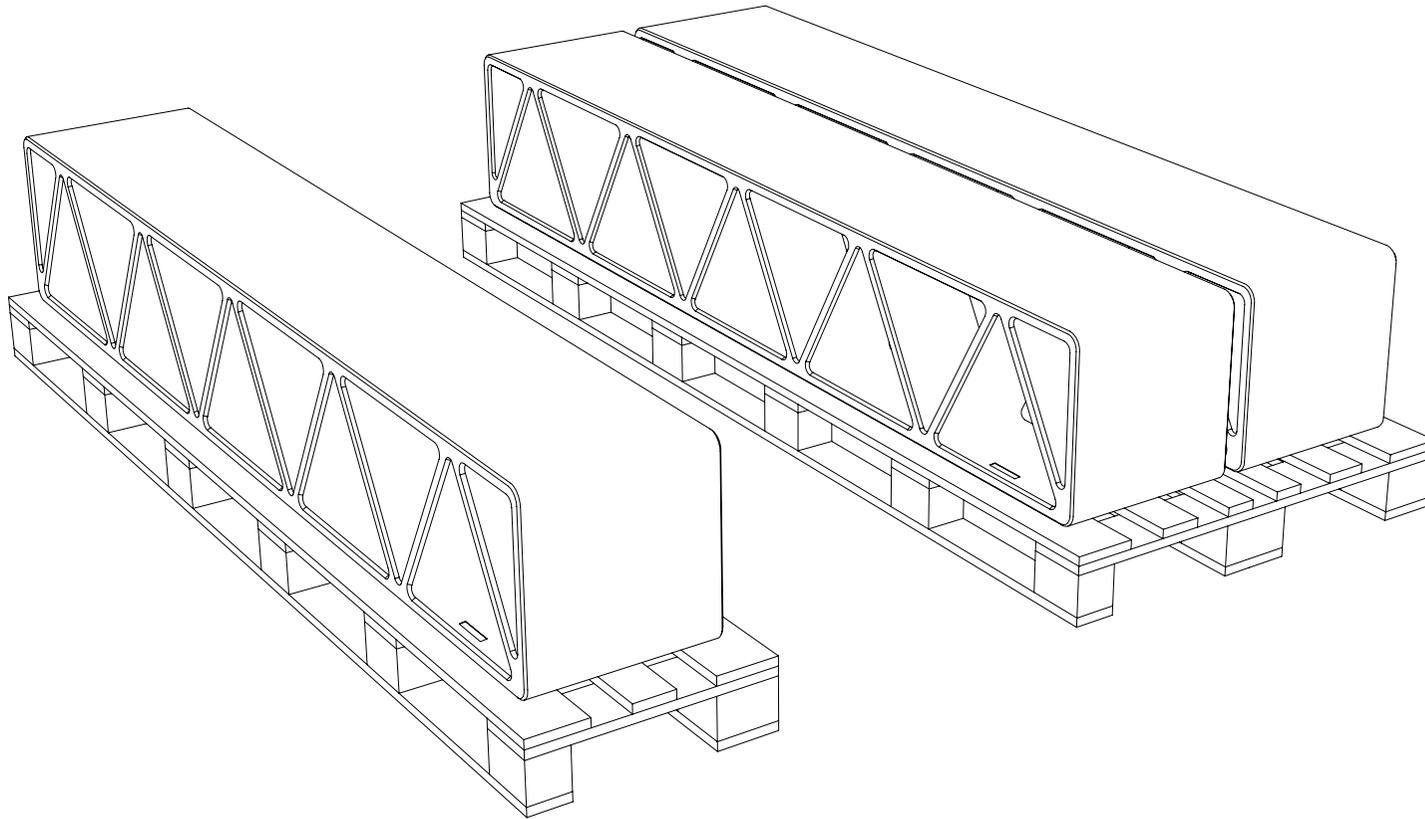


This drawing has only an illustrative character,
for more technical details please see the anchoring drawings available on www.mmcite.com

2.0

Manipulations

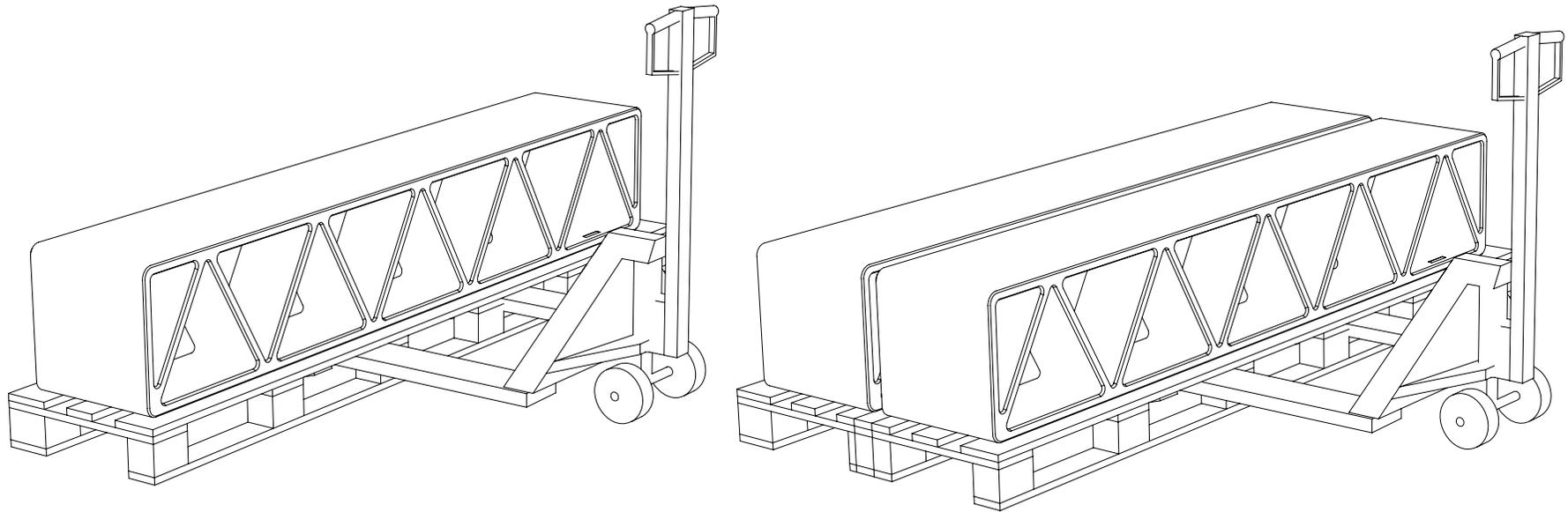
Remove the packing frame before handling,
keep the bottom pallet.



2.0

Manipulations

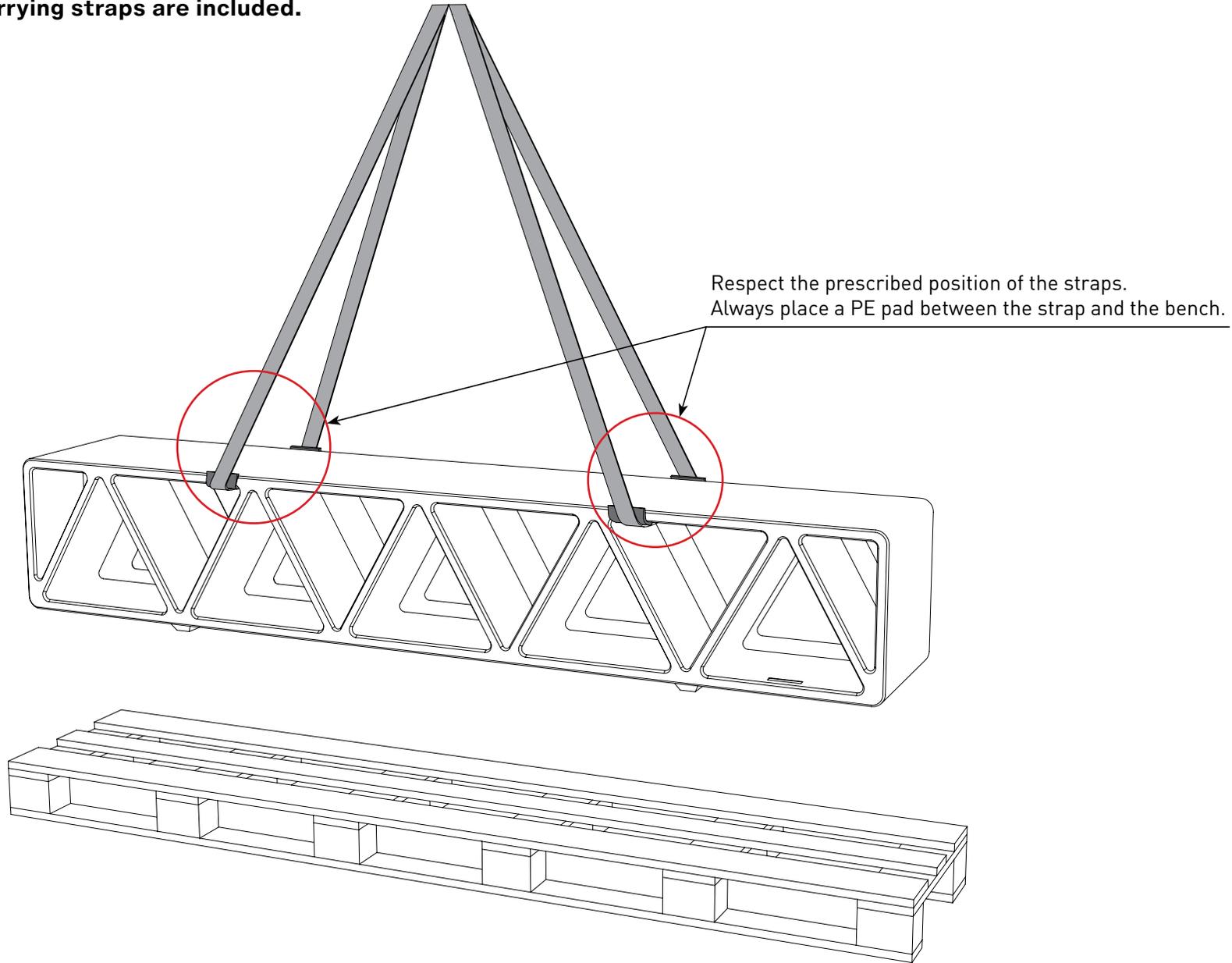
Construcția bench is extremely heavy. It is required to use a lifting equipment.



2.0

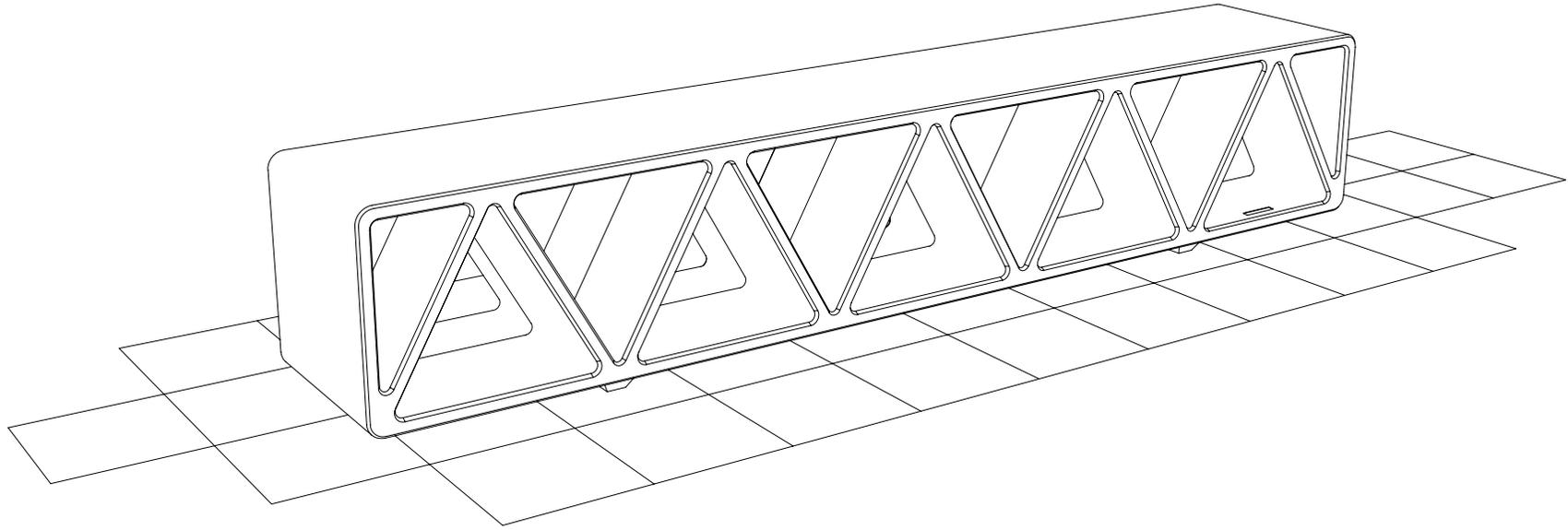
Manipulations

**For final placement use carrying straps - !steel ropes or chains should never be used!
Carrying straps are included.**



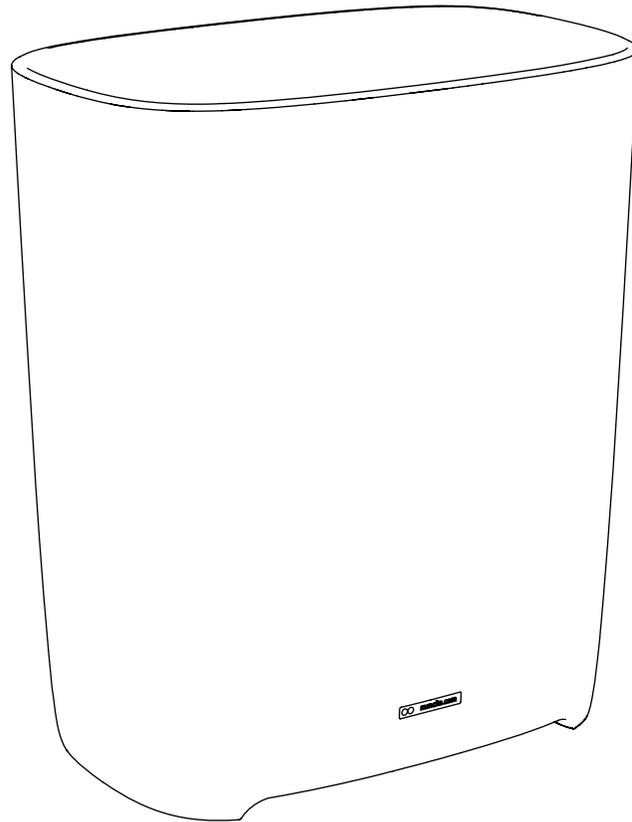
3.0

Finishing



Well done!

Better / handling instructions



Better / handling instructions

1. Foundations
2. Manipulation
3. Finishing

Tools

*workers
recommended*



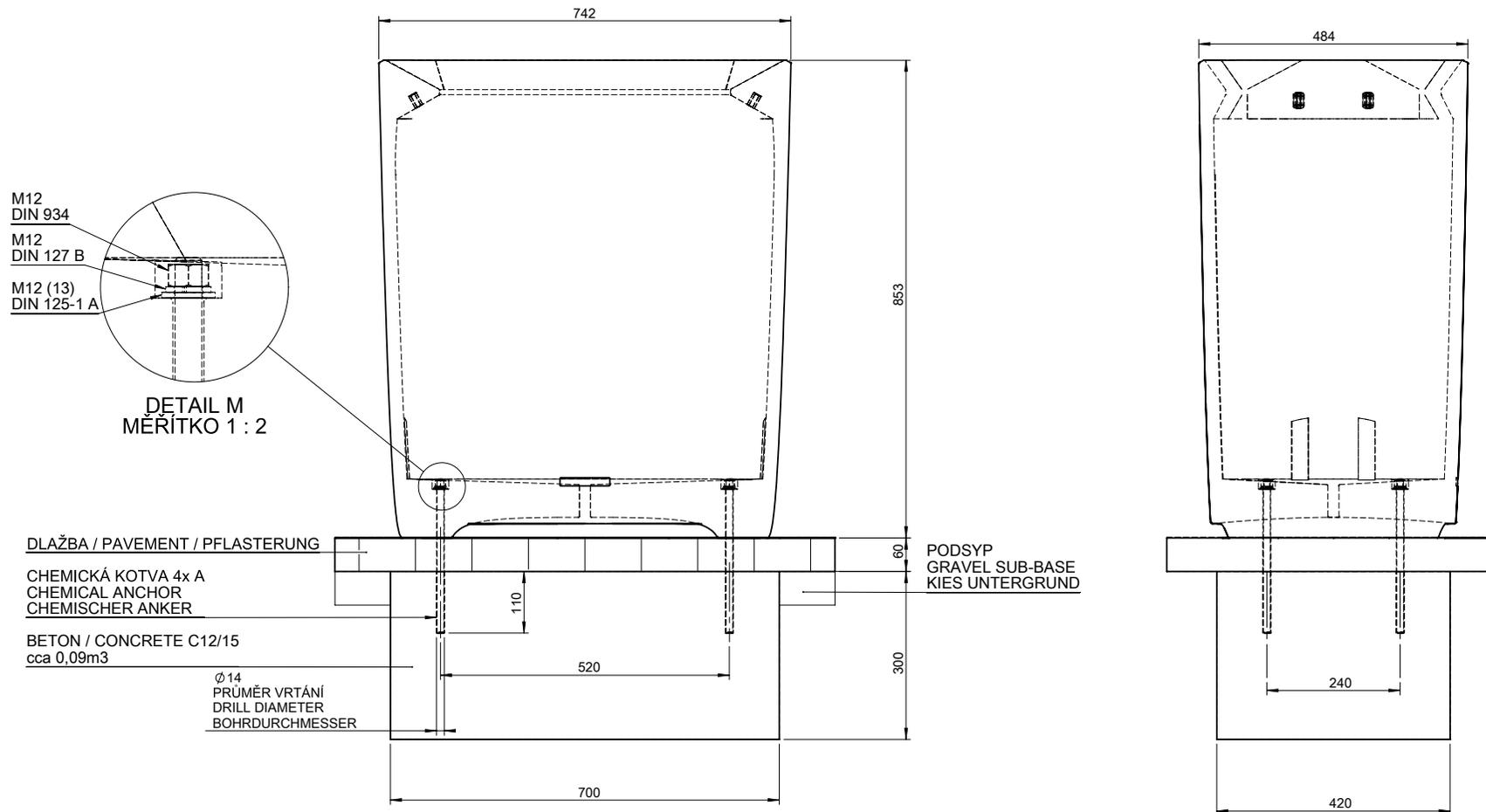
spanner



!ATTENTION!
BETTER LITTER BIN IS EXTREMELY HEAVY AND LIFTING EQUIPMENT IS REQUIRED.
CONSIDER TERRAIN AND SPATIAL CONDITIONS OF LOCATION.

1.0

Foundations

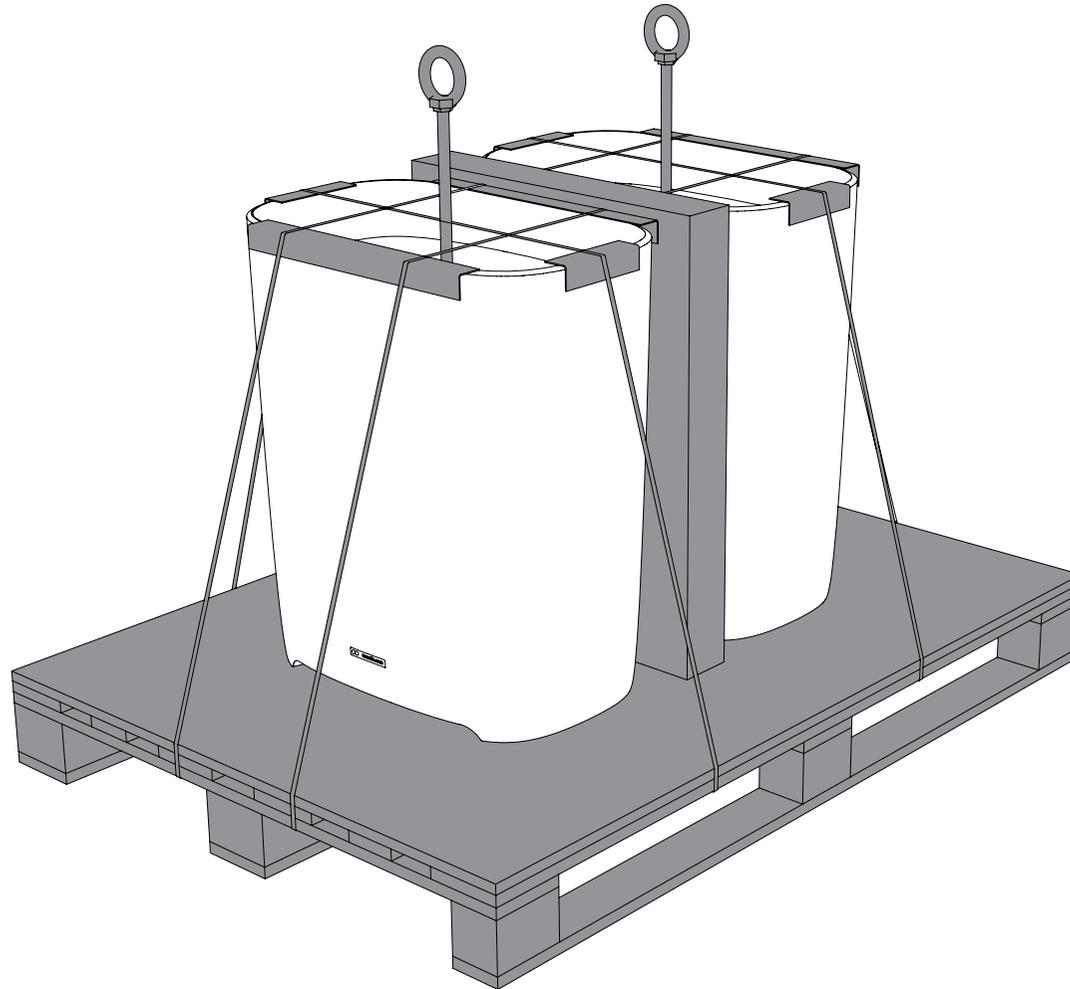


This drawing has only an illustrative character,
for more technical details please see the anchoring drawings available on www.mmcite.com

2.0

Manipulations

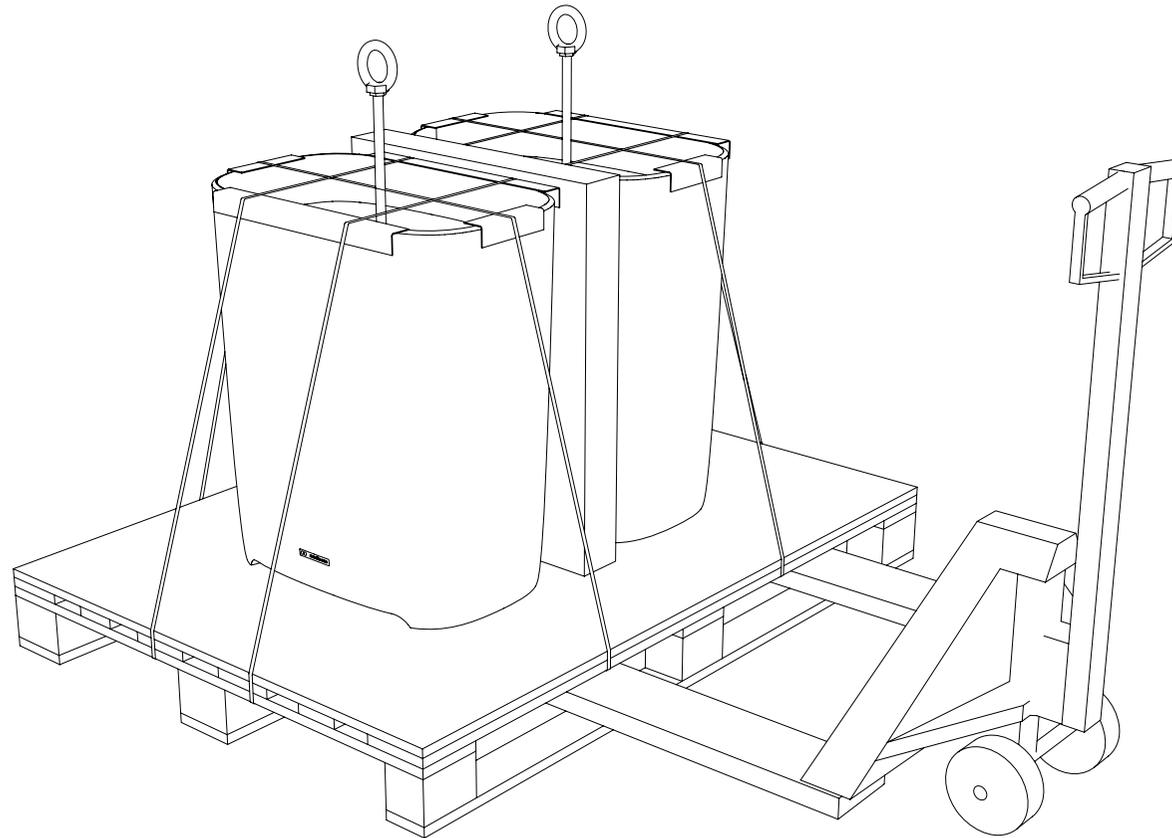
Keep these packaging parts in place under handling.
Keep the pallet in the bottom . Keep both eye bolts inside the bins.



2.0

Manipulations

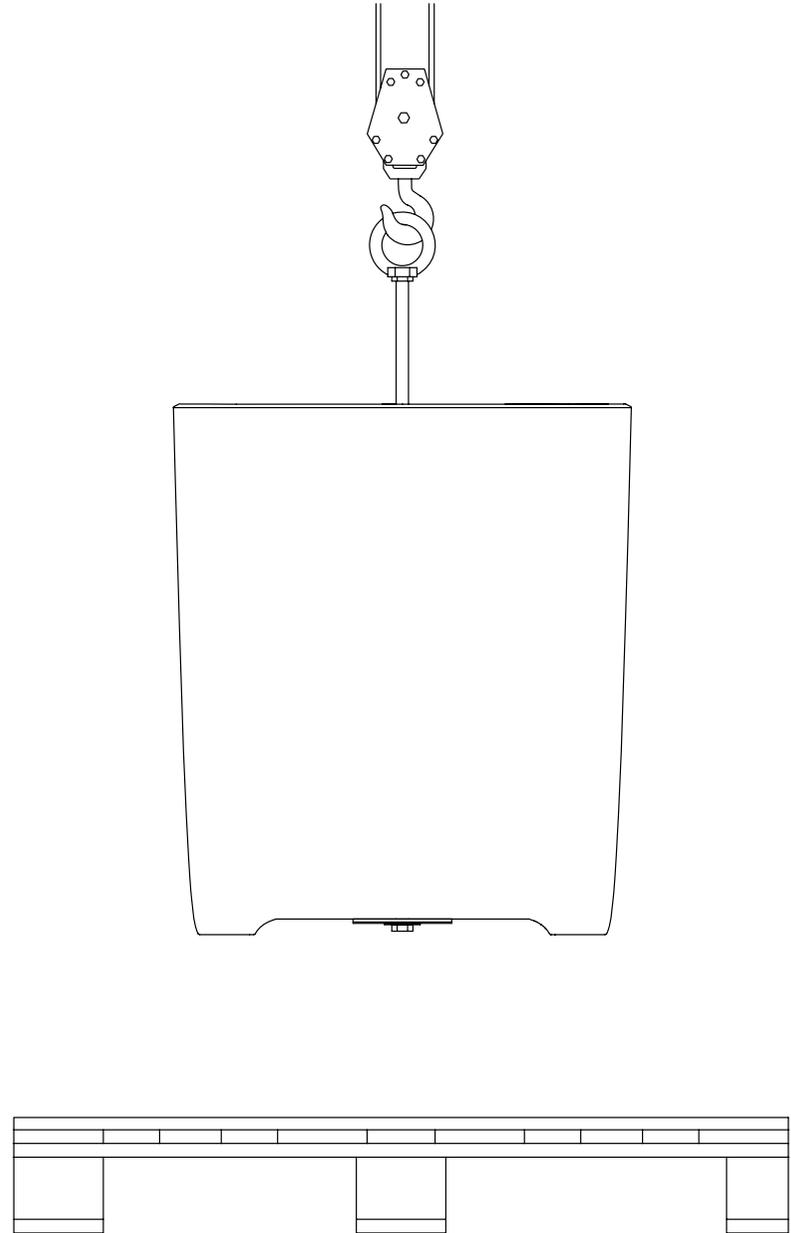
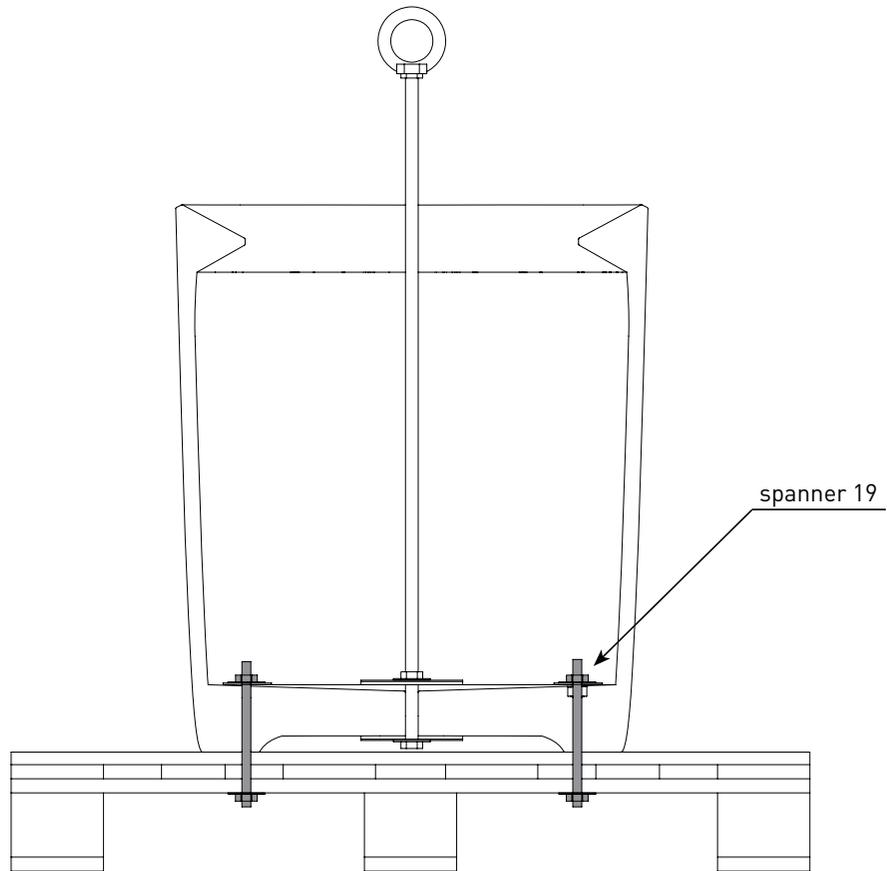
**Keep these packaging parts in place under handling.
Keep the pallet in the bottom . Keep both eye bolts inside
the bins.**



2.0

Manipulations

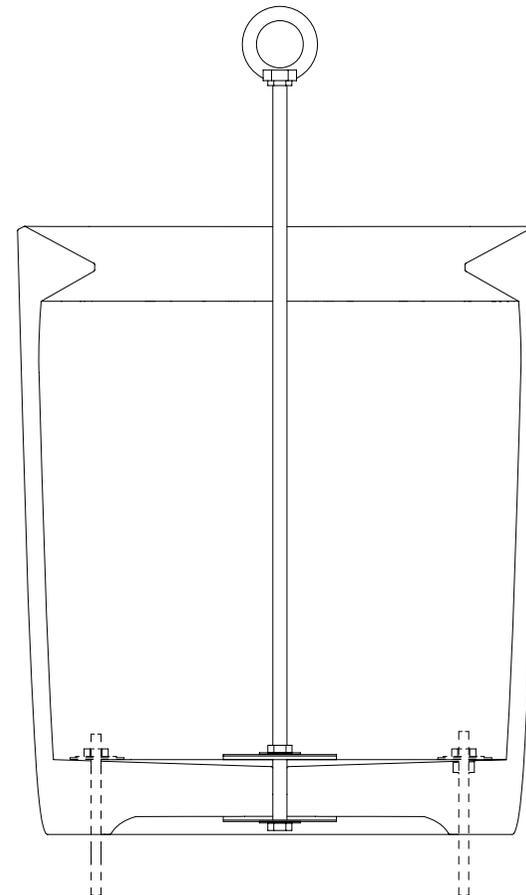
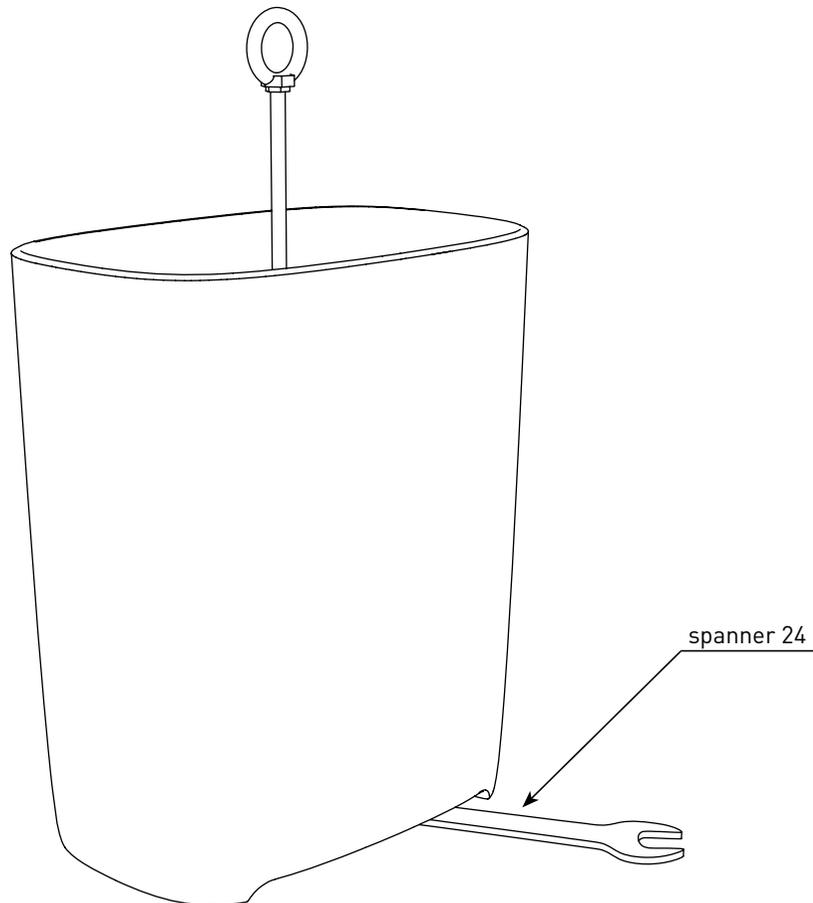
Dismount the litter bin from the pallet. For final placement use a lifting hook.



2.0

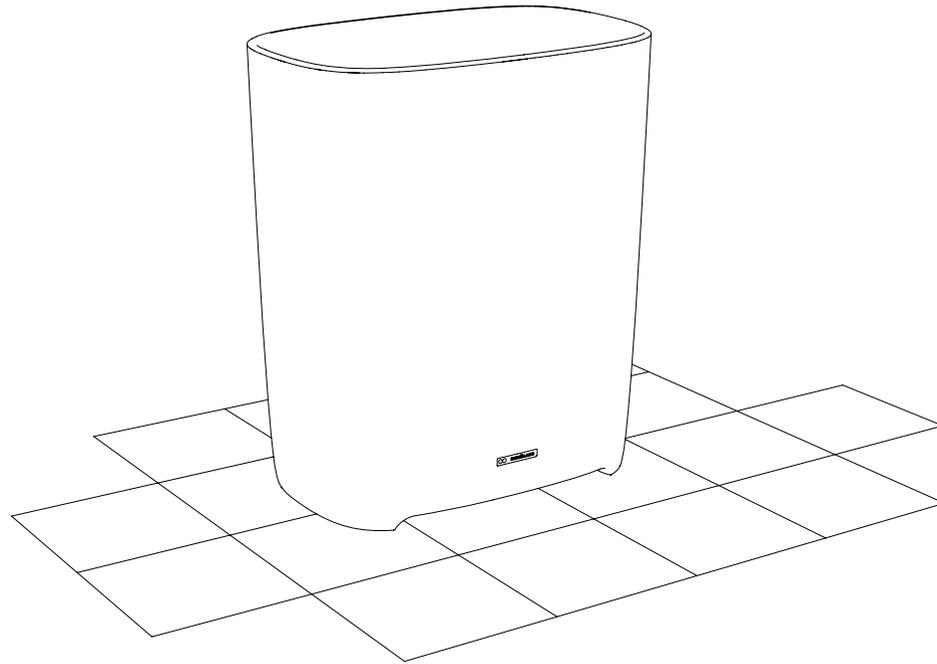
Manipulations

**Anchoring to the paving or on compacted ground into concrete foundation by means of M12 threaded rods.
High weight enables freely lay on the pavement.
Dismount the eye bolt from the bottom of the litter bin using the open-end wrench 24 mm.**



3.0

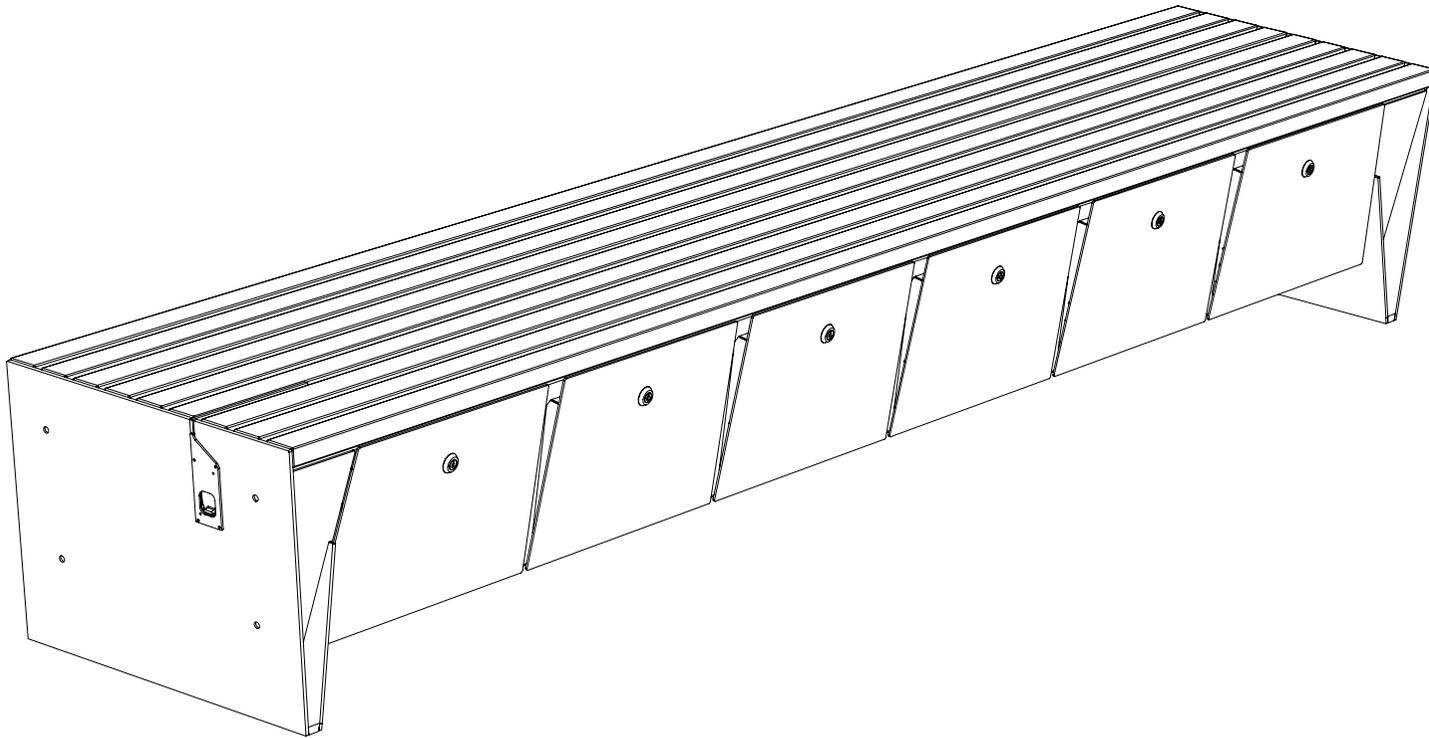
Finishing



Well done!

Eblocq / handling instruction

The bench with lockers for your stuff and for recharging your mobile devices or e-bike batteries.



Equipment

LOCKERS:

- the bench offers six lockers
- each locker is equipped with one 230V outlet, one outlet with two USB ports and one orientation light
- it is possible to recharge: mobile devices, laptops, e-bike batteries
- approximate inner dimensions of each locker: 45x26x45 cm (w x h x d)
- the locker accommodate for example: bike helmet, bag or backpack, e-bike charger and battery, laptop, tablet, ...
- to increase the safety against overheating, the lockers are equipped with the system of inner space ventilation

AVAILABLE TYPE OF LOCKS:

- mechanical lock with key and with possibility of one master key
- electronic code lock with possible of adjustable time period and one master code

ELECTRO EQUIPMENT SPECIFICATION:

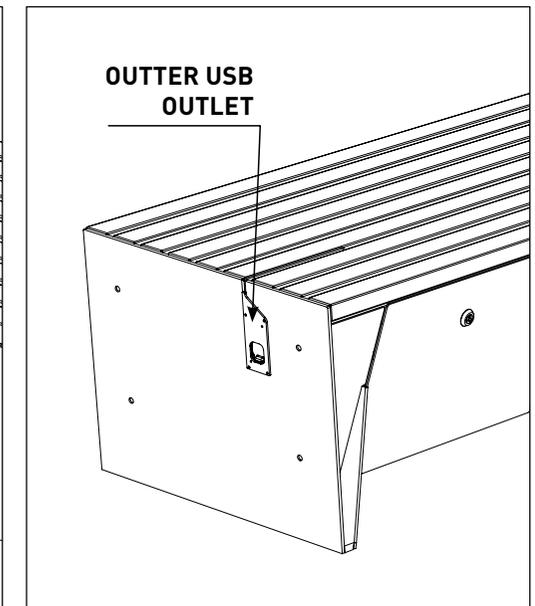
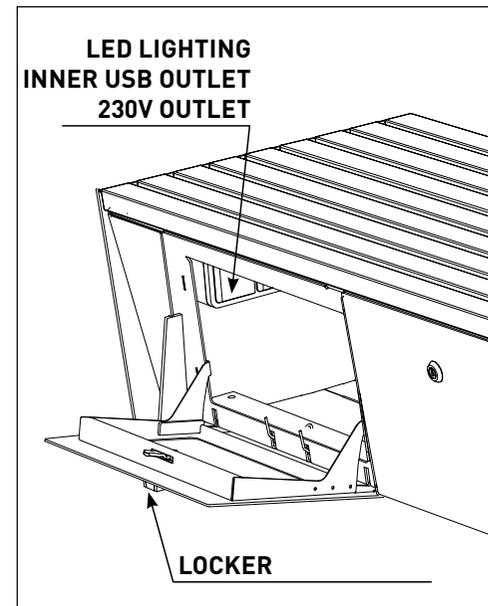
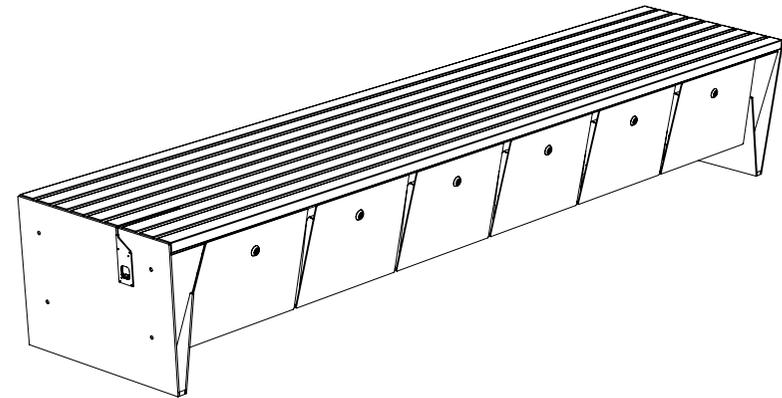
- 230V outlet - standardly Schuko type
- inner USB outlet - 5V, max. 1,5A
- inner LED light
- outer USB - 5V, max. 1A

OVERALL ELECTRO CHARACTERISTICS:

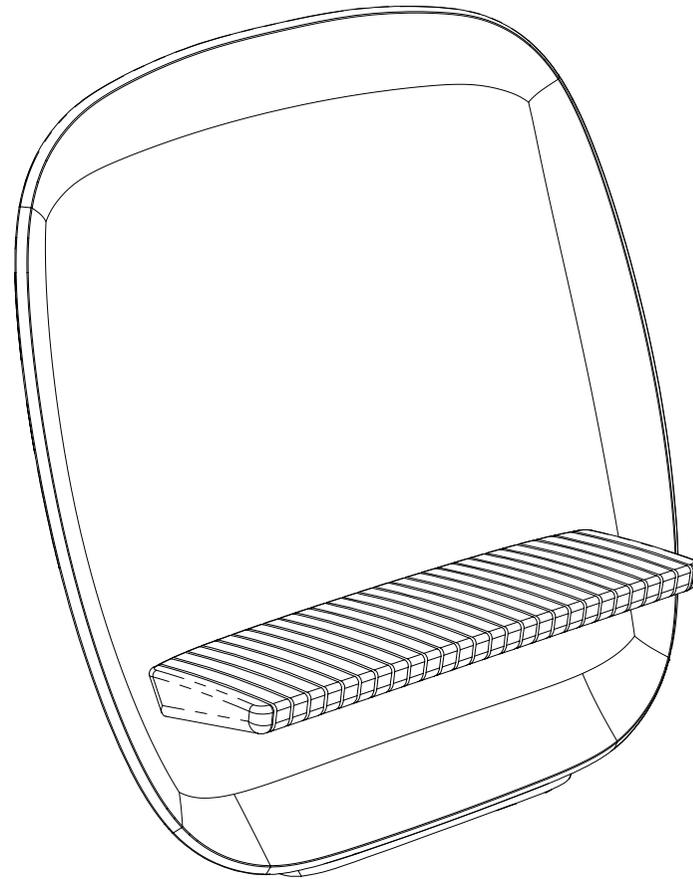
- input voltage: 100÷240 V AC (50÷60 Hz)
- current: 16 A
- power: max. 3500 W (when loading all outlets)
- operating temperature: 0°C to 45°C
- weight: 205 kg

SUPPLY CABLE SPECIFICATION:

- max. cable cross section: 2,5mm²
- possible cable diameter: 7-12mm
- recommended cable protection: 16A (30mA)
- minimal cable type requirement: H03RT-H 3x0,75 (the outer insulation must not be PVC)



Satellite / handling instructions



Satellite / handling instructions

1. foundations
2. manipulation
3. finishing

Satellite / tools

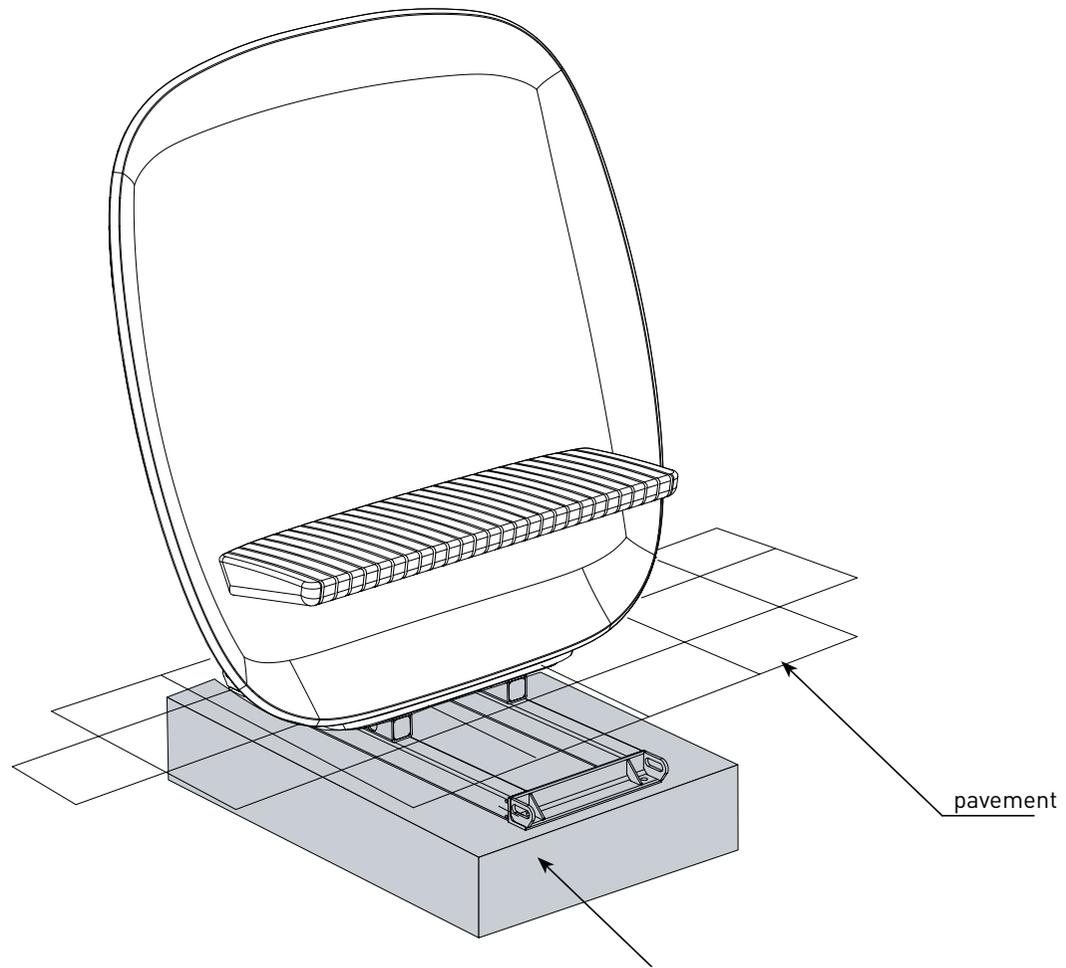
*workers
recommended*



!ATTENTION!
SATELLITE BENCH IS EXTREMELY HEAVY AND LIFTING EQUIPMENT
IS REQUIRED.
CONSIDER TERRAIN AND SPATIAL CONDITIONS OF LOCATION.

1.0

Foundations

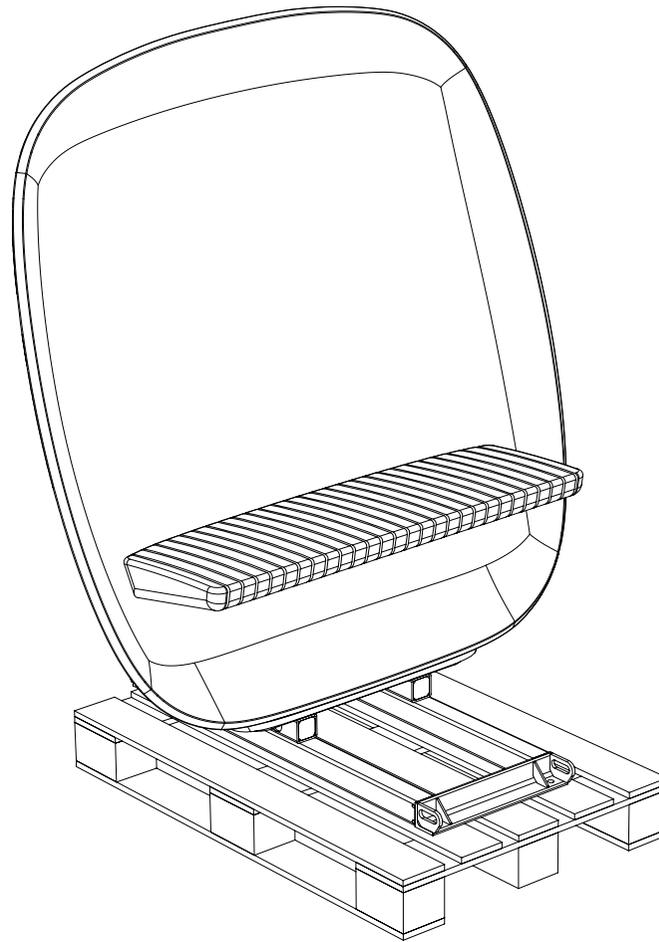


This drawing has only an illustrative character,
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2.0

Manipulation

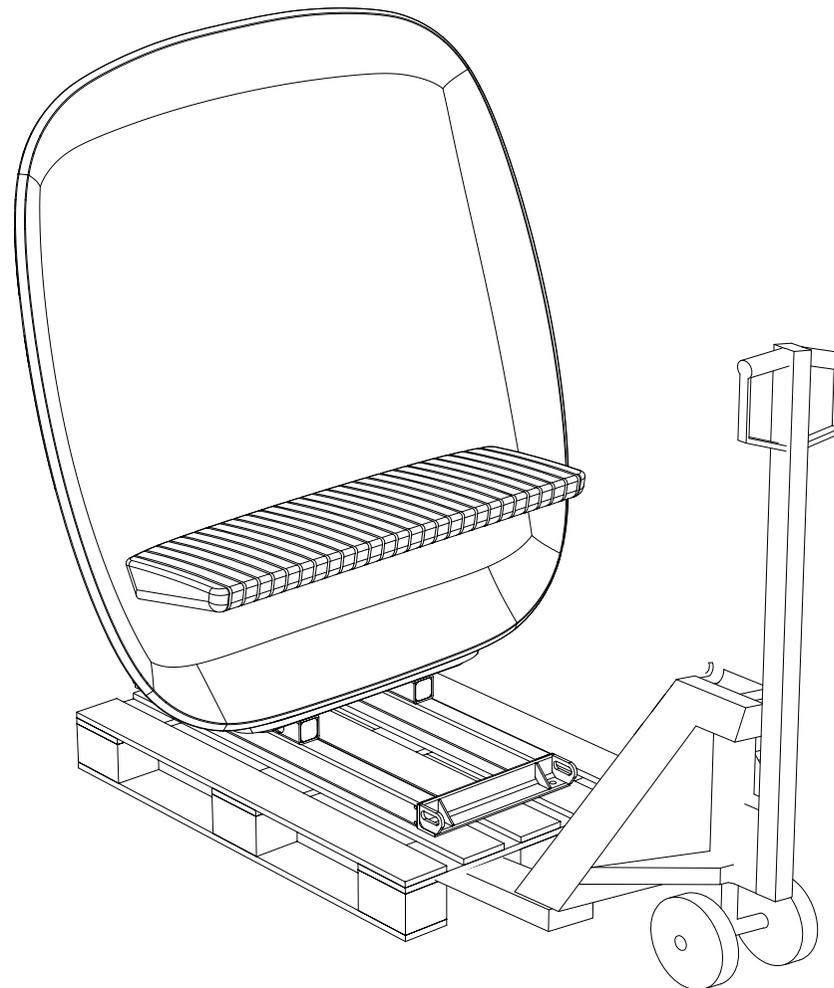
**Remove the packing frame before handling,
keep the bottom pallet.**



2.0

Manipulation

SATELLITE bench is extremely heavy. It is required to use a lifting equipment.

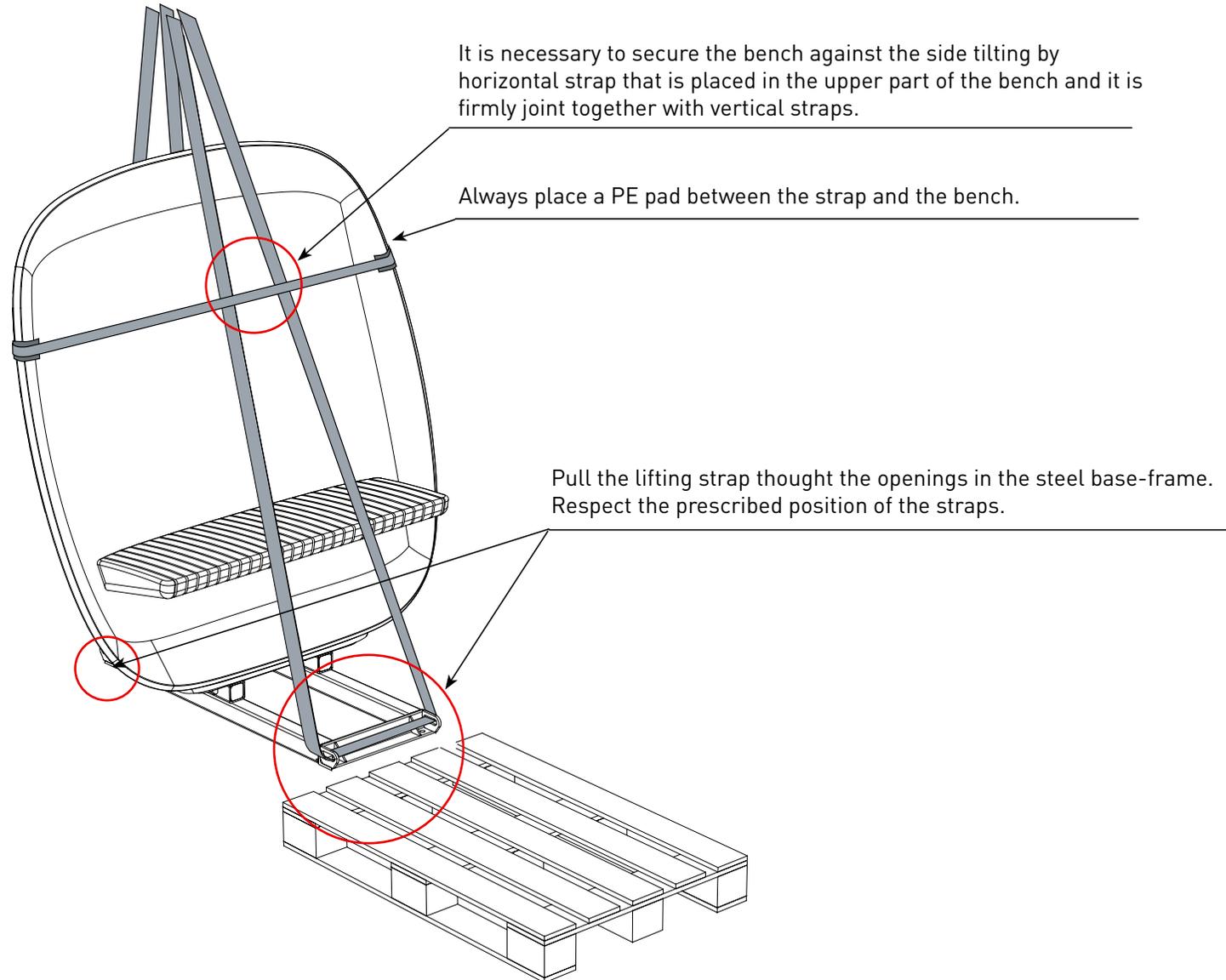


2.0

Manipulation

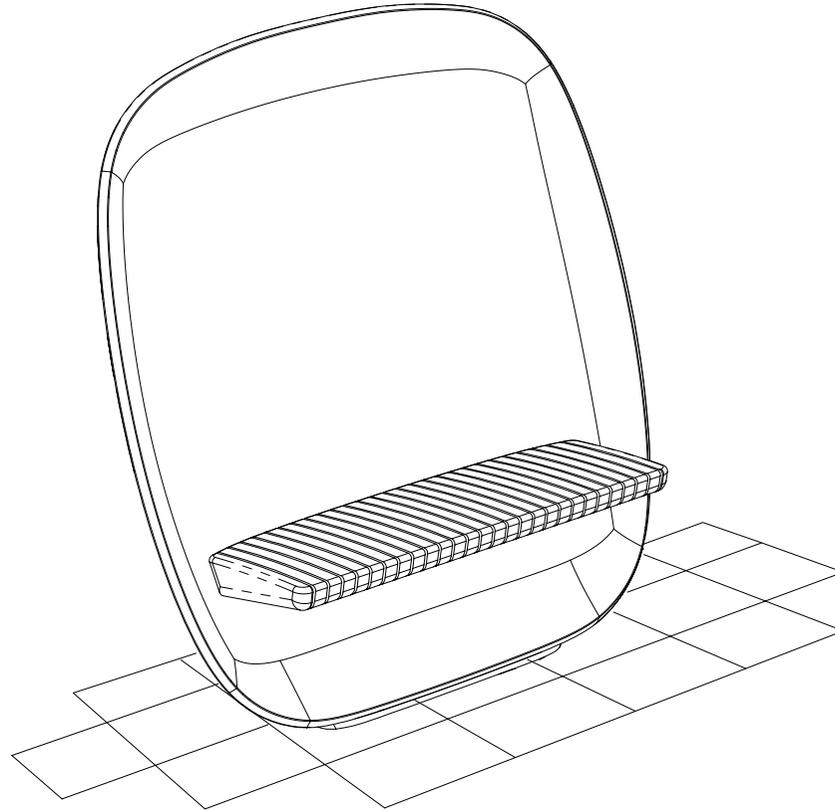
For final placement use carrying straps - **!steel ropes or chains should never be used!**
Carrying straps are included.

! BEFORE THE FINAL PLACEMENT OF THE BENCH, PLEASE REMOVE SAFETY BOLTS FROM THE PALLET. !



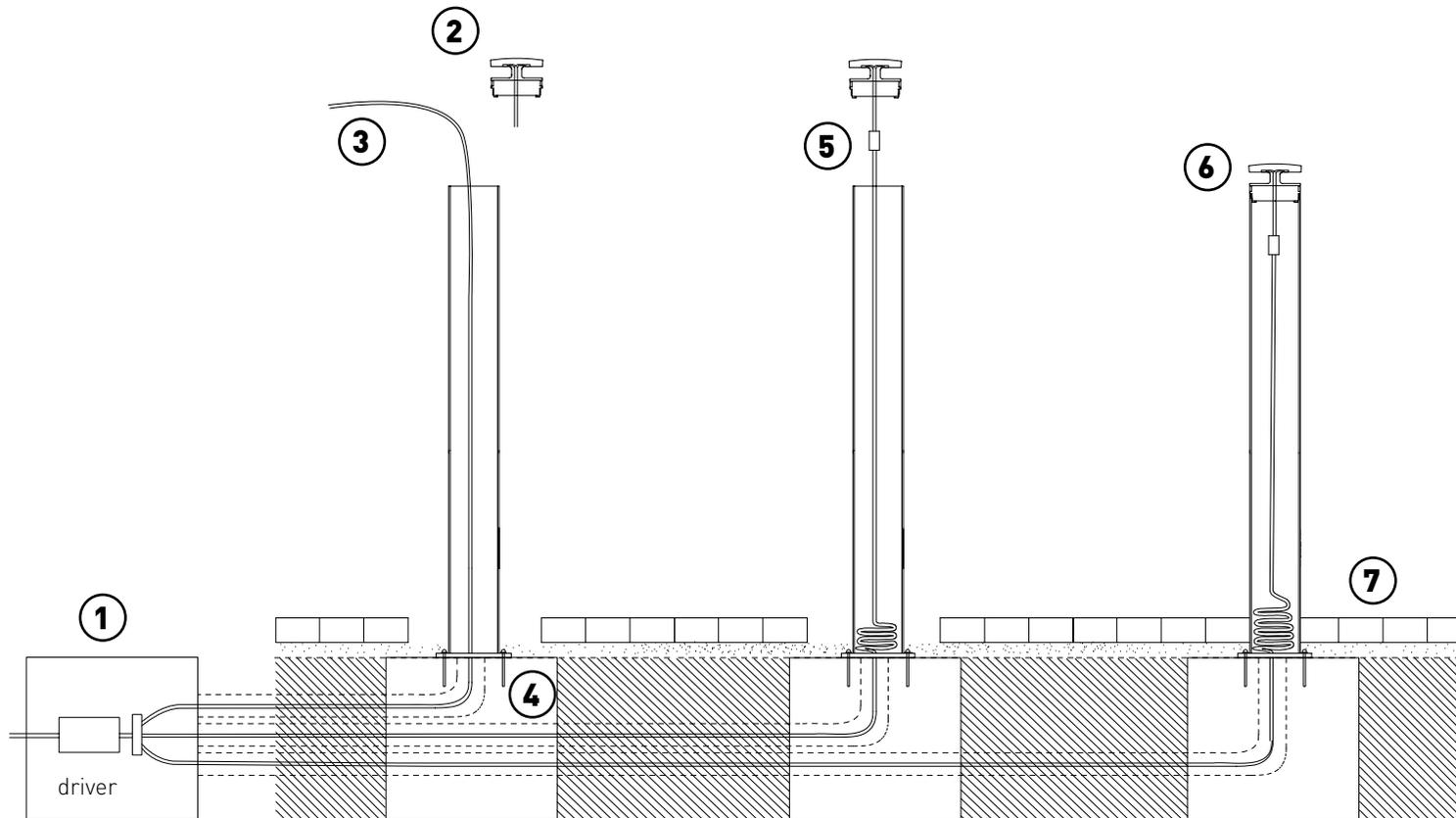
3.0

Finishing



Well done!

Installation and connection:



1 install the driver

2 unscrew the head of the bollard

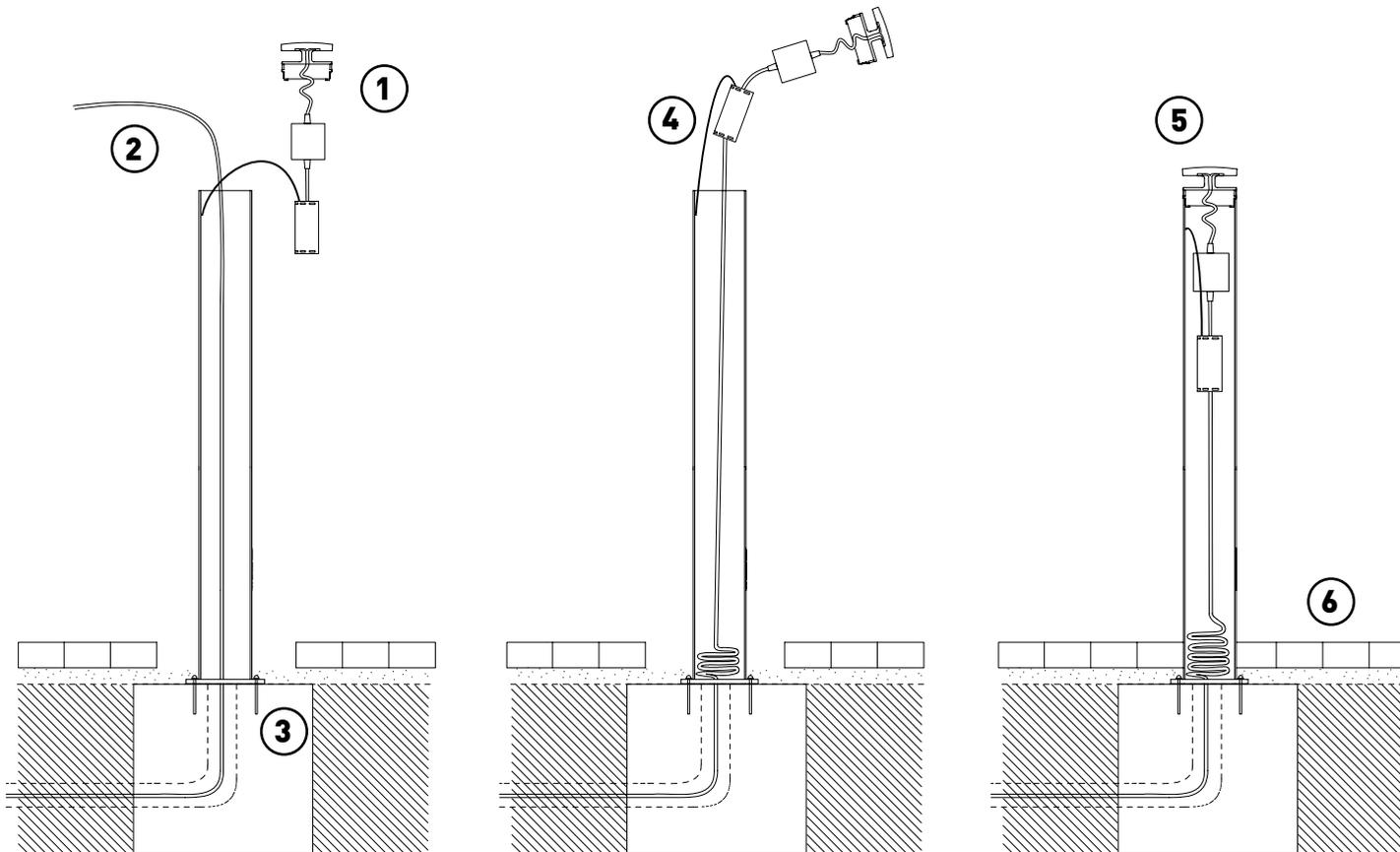
5 connect the lighting cable and the driver cable by means of junction

3 stretch the cable from the ground (12 VDC) through the bollard

6 screw the head on

4 anchor the bollard (see the anchoring drawing)

7 pave the surface

Installation and connection:

1 remove the head and remove all electronics from the bollard

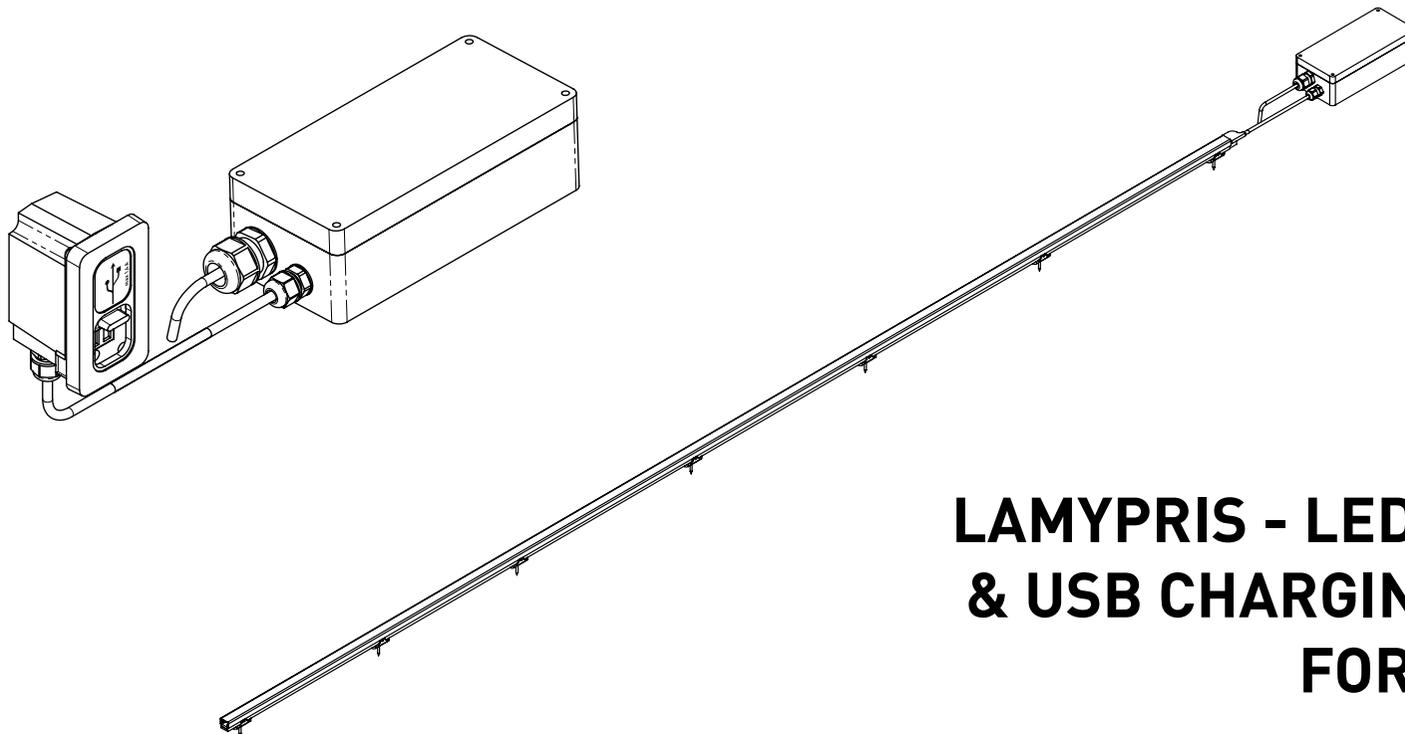
2 pull the supply cable (100/240 VAC) from the ground through the bollard

3 anchor the bollard (see anchoring drawings)

4 plug the supply cable into the splice joint

5 screw the head on

6 pave the surface



**LAMYPRIS - LED LIGHTING
& USB CHARGING SYSTEM
FOR BENCHES**

1. assembly instructions and connection

2. example of use

3.1 WOODY - LWD + Power cable pulling scheme

3.2 RADIUM - LRA + Power cable pulling scheme

3.3 BLOCQ - LBQ + Power cable pulling scheme

3.4 RIVAGE - RVA + Power cable pulling scheme

3. connecting the extended benches

4. safety instructions including the placement

5. maintenance and disposal

GENERAL INFORMATION:

Before assembly, read the installation instructions.

The installation is based only on the connection for the supply cable with parameters described on page 3.

The luminaire is always located on the bottom of the seat.

When fixing the electronic box to the structure, use serrated washers under the screws to secure grounding of the steel structure.

It is necessary to ensure a firm installation of the bench to the ground.

Electrical equipment is not intended for looping.

SAFETY INFORMATION:

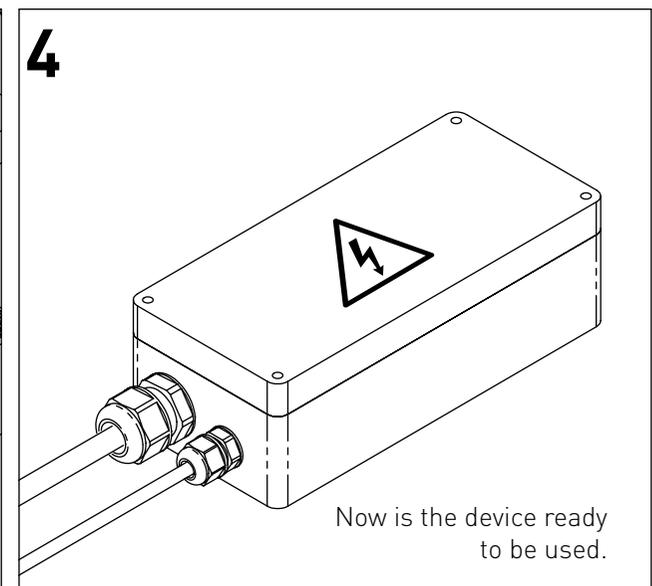
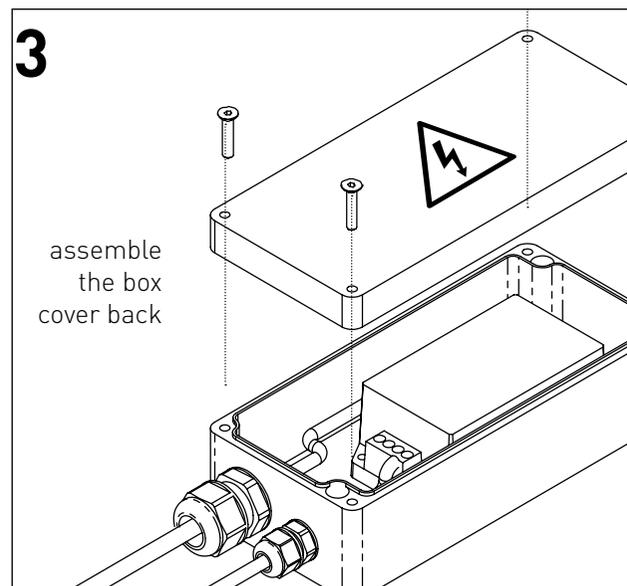
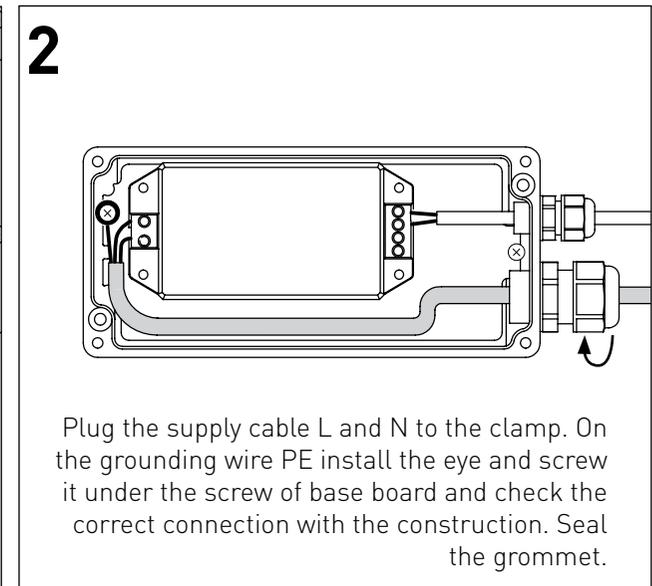
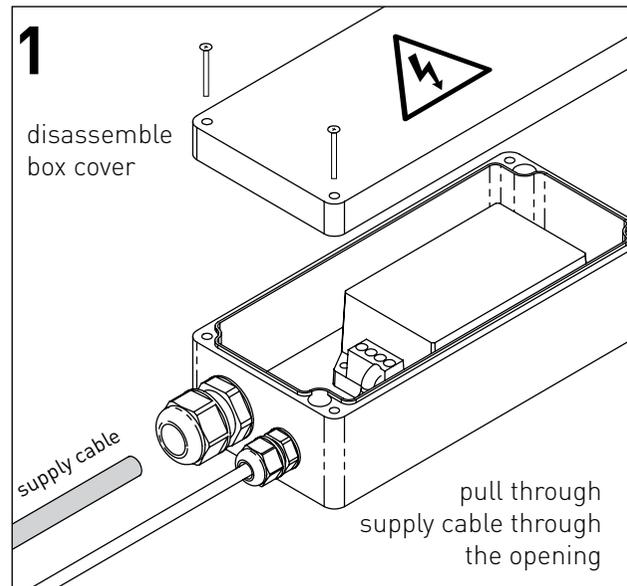
The manufacturer is not responsible for any damages and injuries caused by improper installation or misuse.

Installation and connection to the network must be in accordance with general best practice and country standards.

The device can only be assembled, plugged in and operated by a person with the relevant electrotechnical qualification.

Any interventions in design or wiring of the el. device are inadmissible.

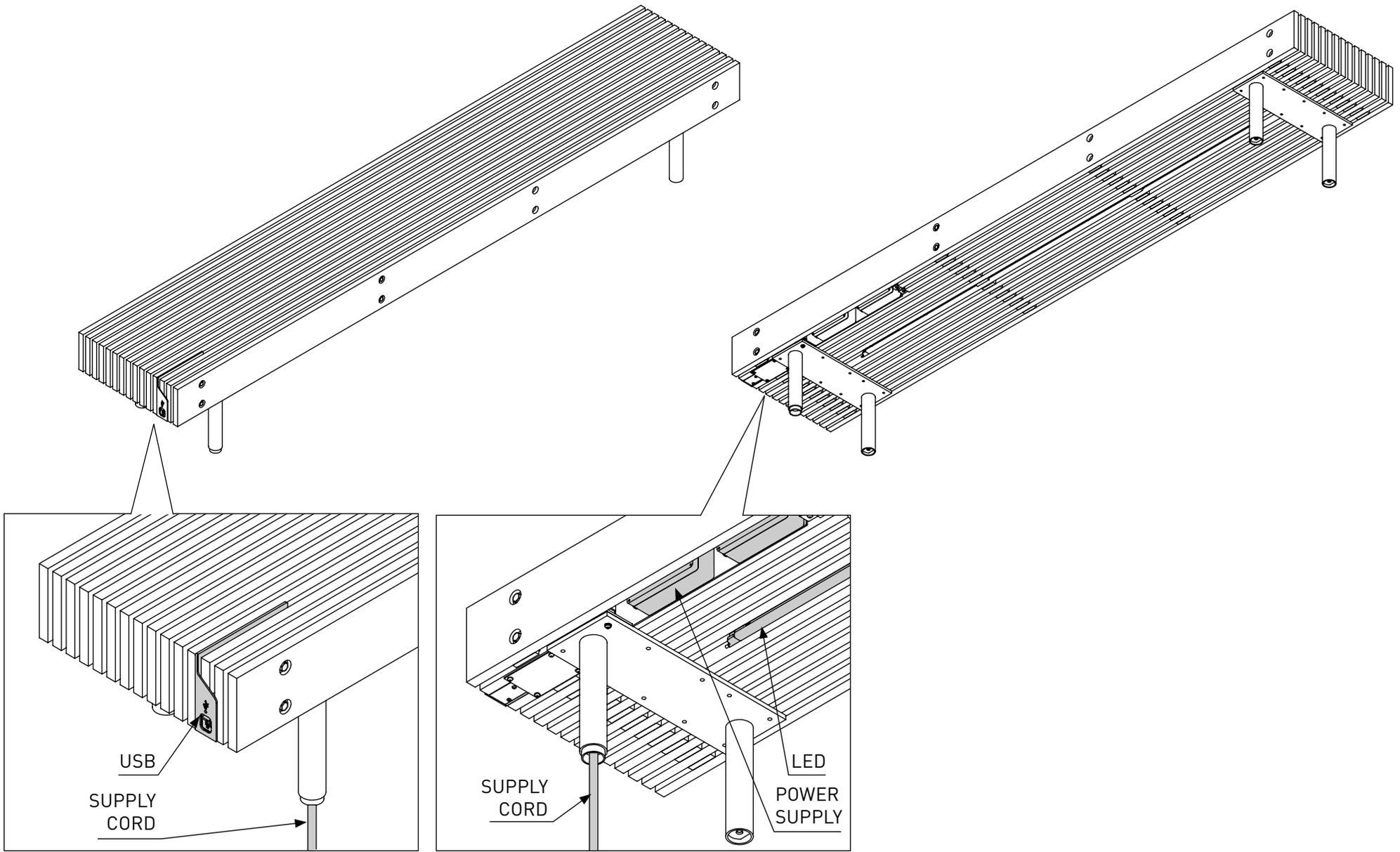
Network connection, maintenance and repairs of el. device must be only carried out when the power is turned off!



!The location of the inlet is specified in the foundation drawing!

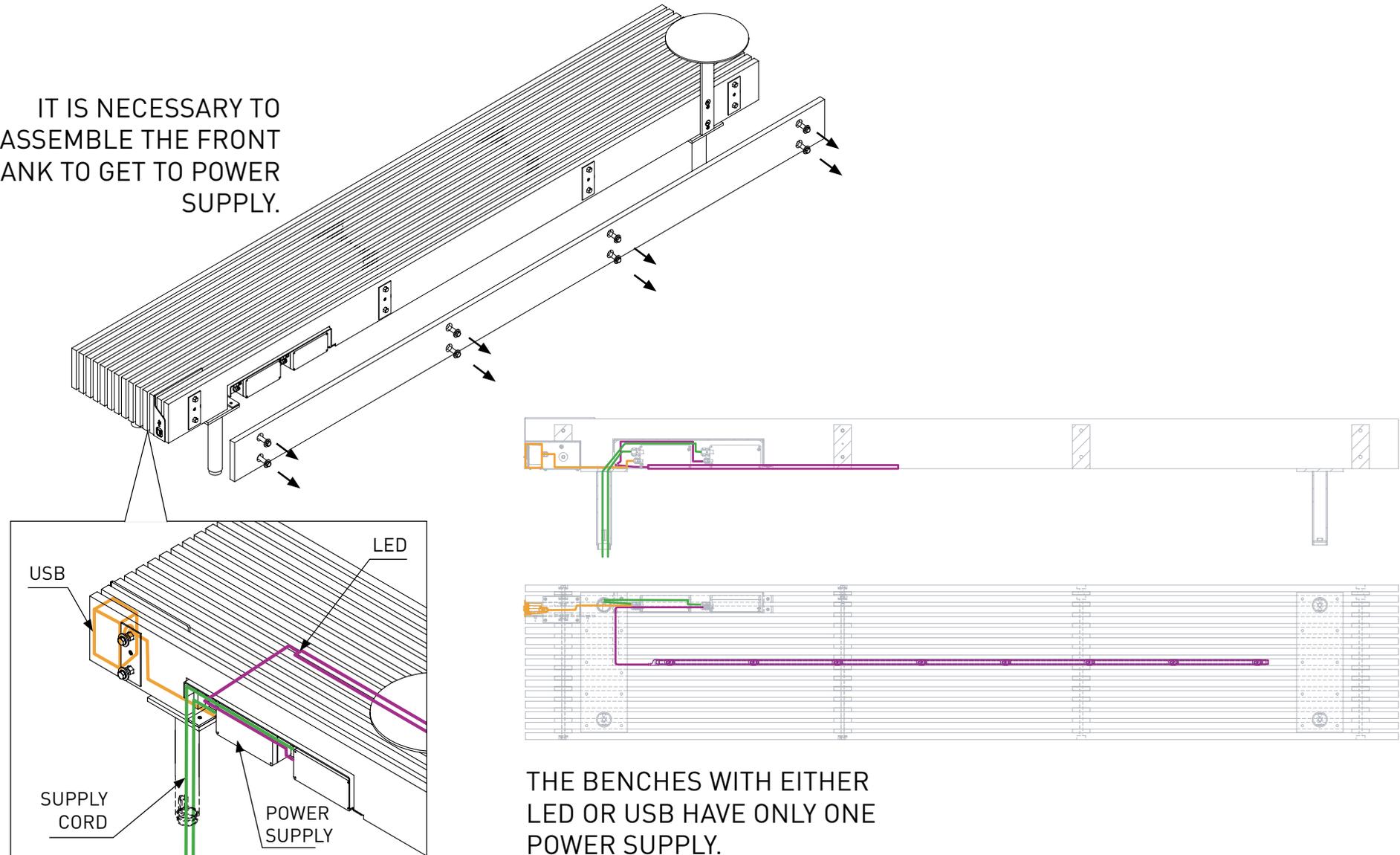
2.1

Woody / example of use



THE PRINCIPLE OF PULLING THE CABLE IS THE SAME FOR ALL WOODY BENCHES.

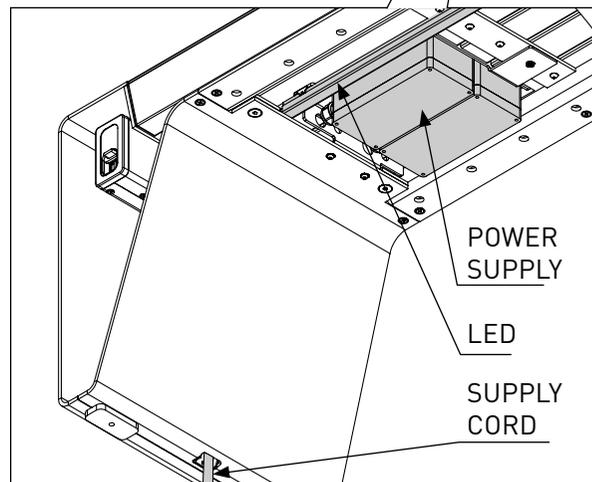
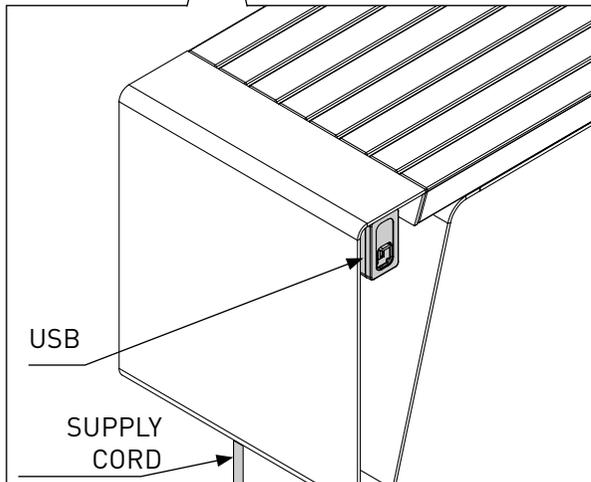
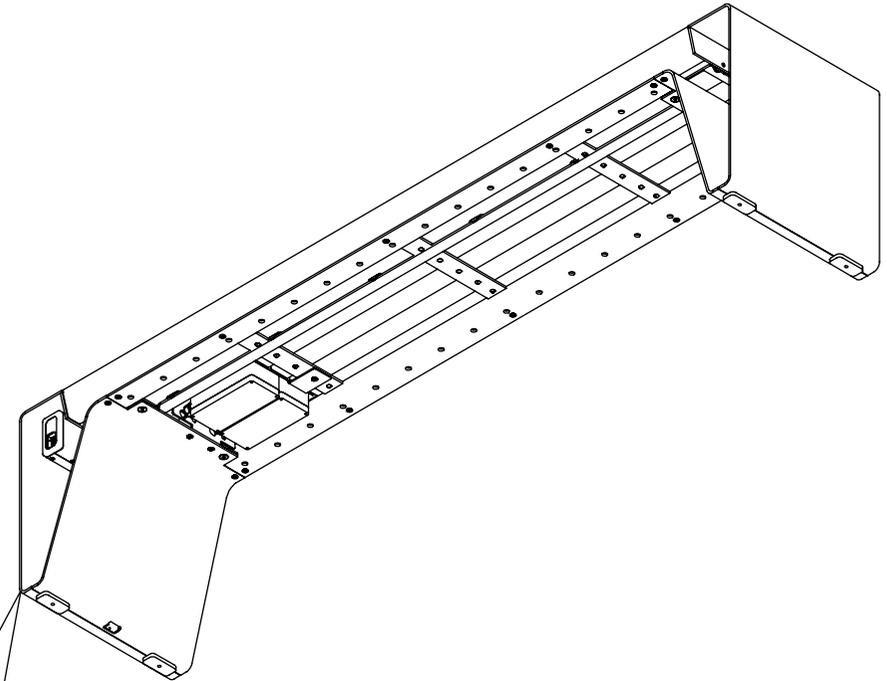
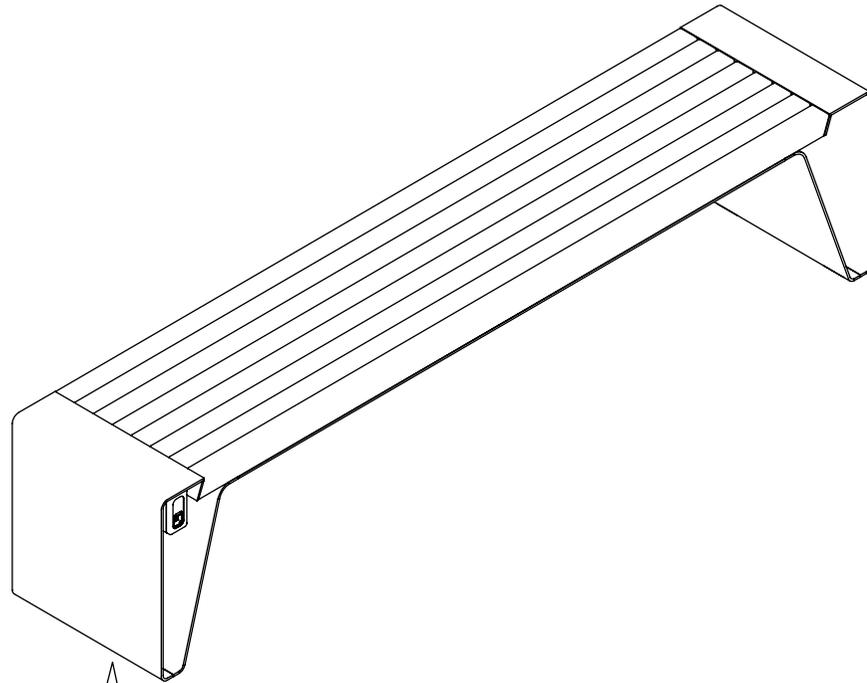
IT IS NECESSARY TO DISASSEMBLE THE FRONT PLANK TO GET TO POWER SUPPLY.



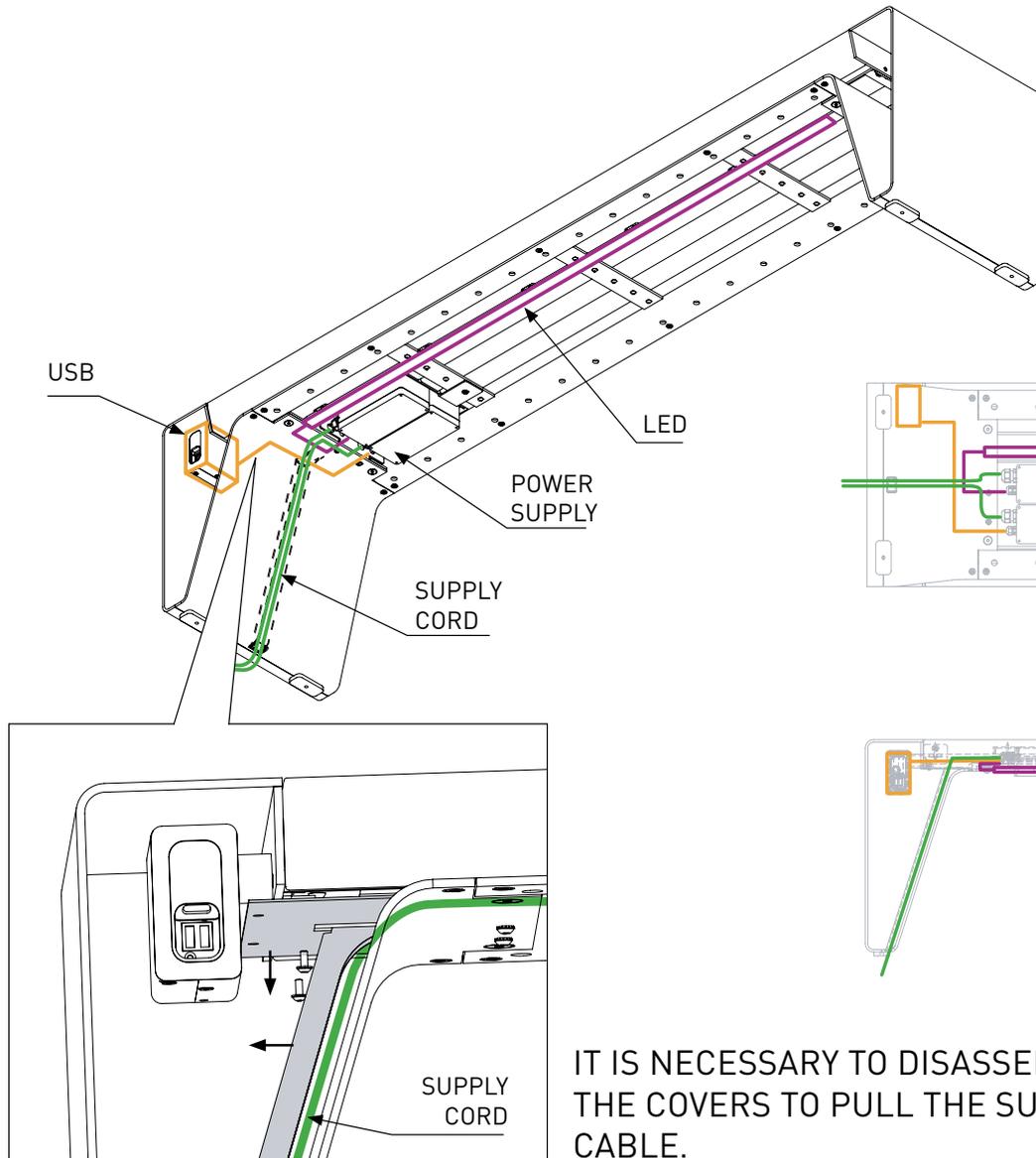
THE BENCHES WITH EITHER LED OR USB HAVE ONLY ONE POWER SUPPLY.

2.2

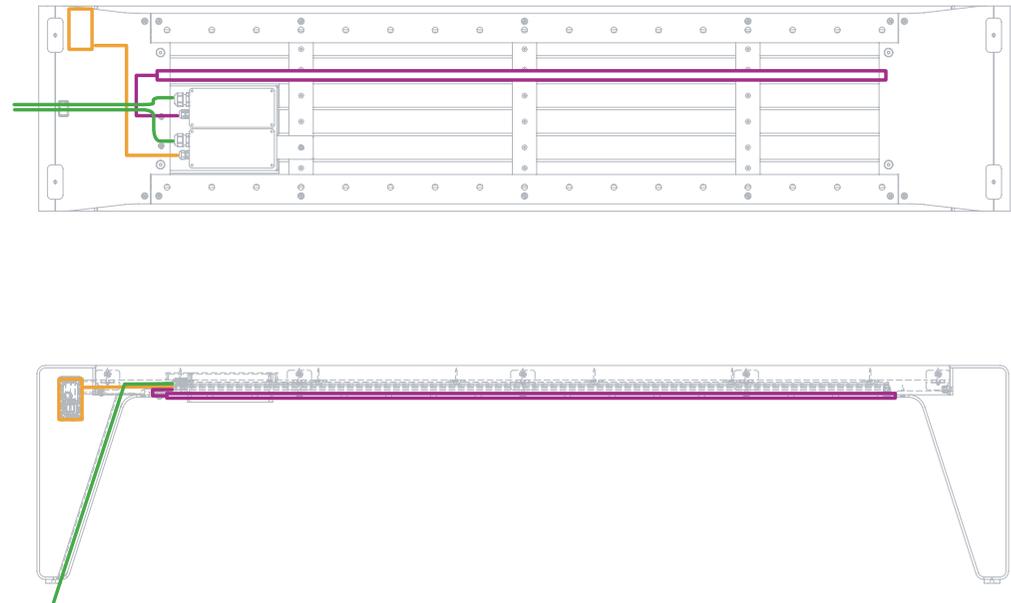
Radium / example of use



THE PRINCIPLE OF PULLING THE CABLE IS THE SAME FOR ALL RADIUM BENCHES.



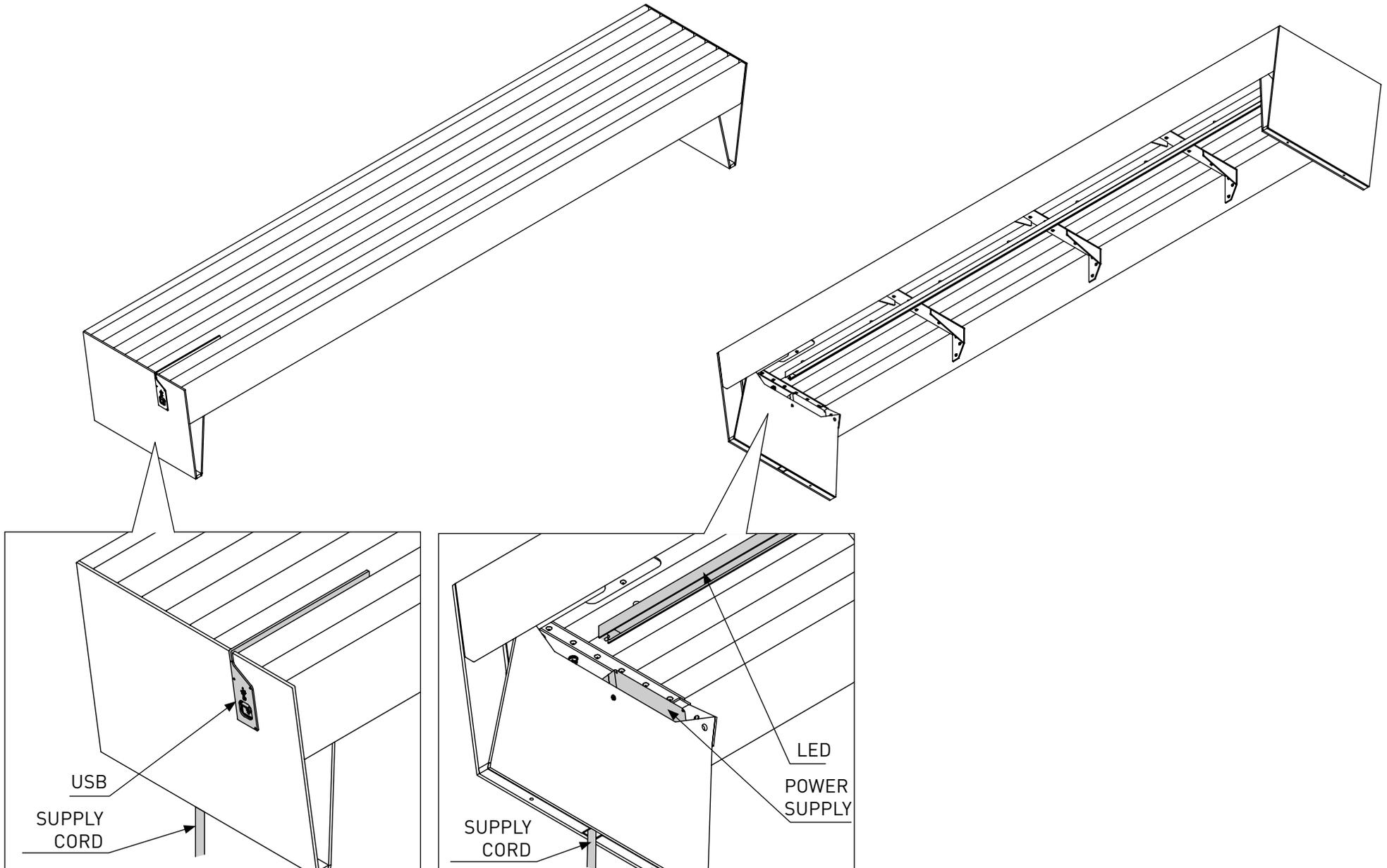
THE BENCHES WITH EITHER LED OR USB HAVE ONLY ONE POWER SUPPLY.



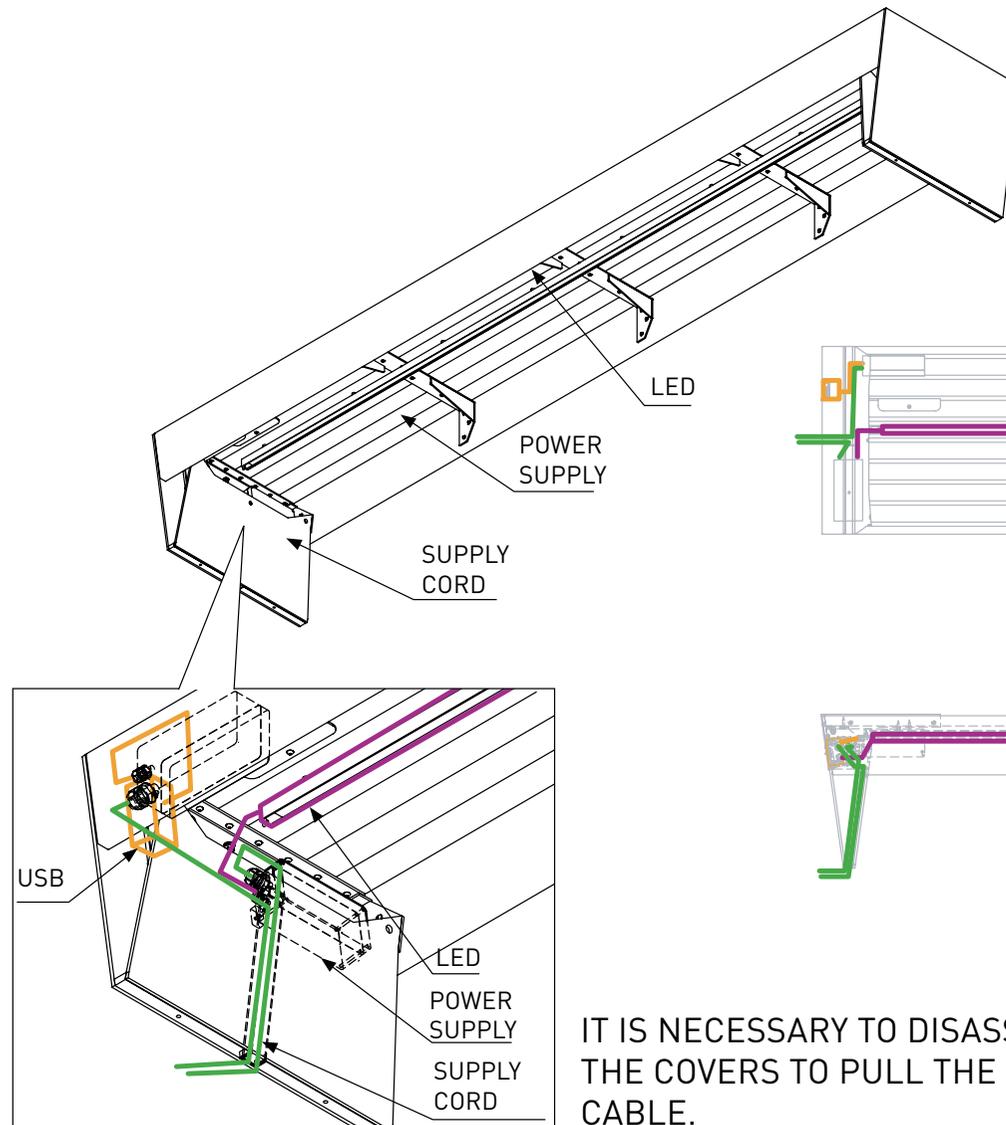
IT IS NECESSARY TO DISASSEMBLE THE COVERS TO PULL THE SUPPLY CABLE.

2.3

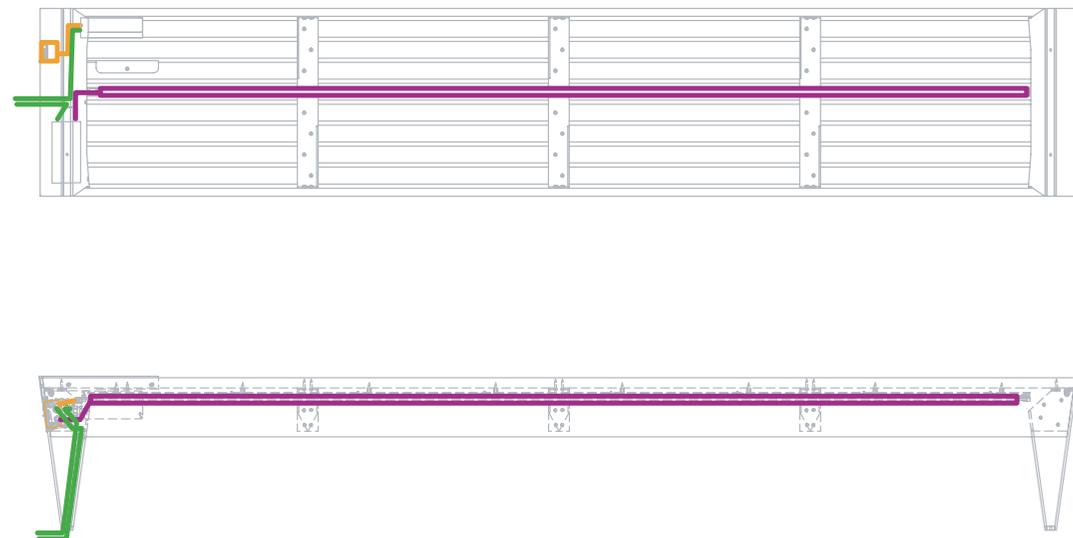
Blocq / example of use



THE PRINCIPLE OF PULLING THE CABLE IS THE SAME FOR ALL BLOCQ BENCHES.



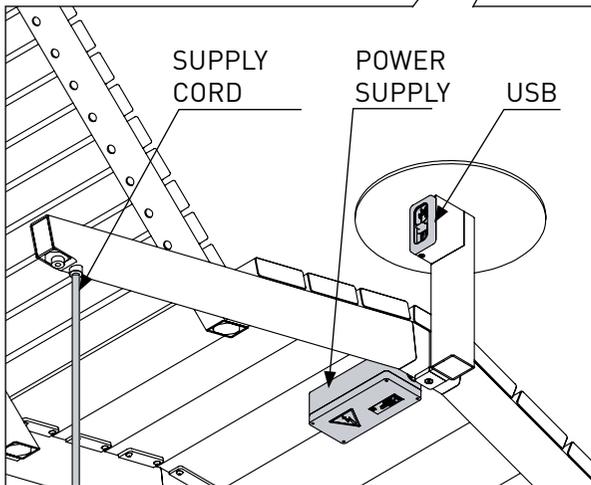
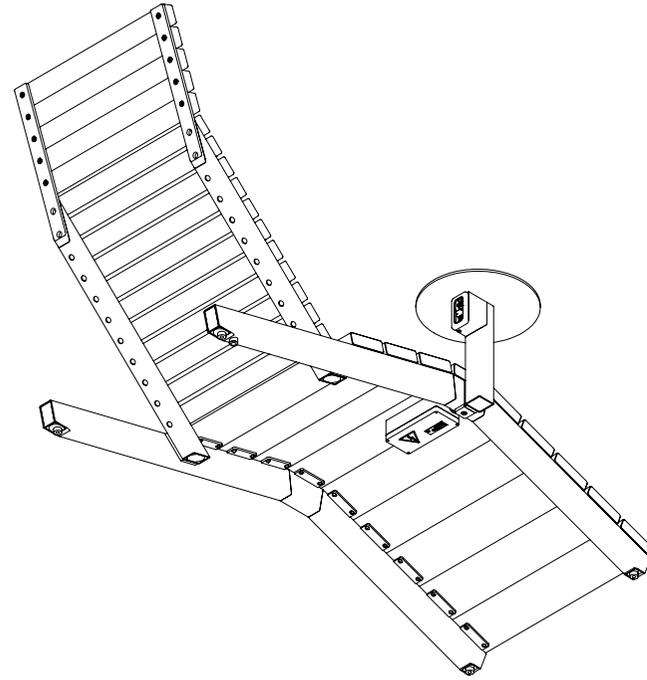
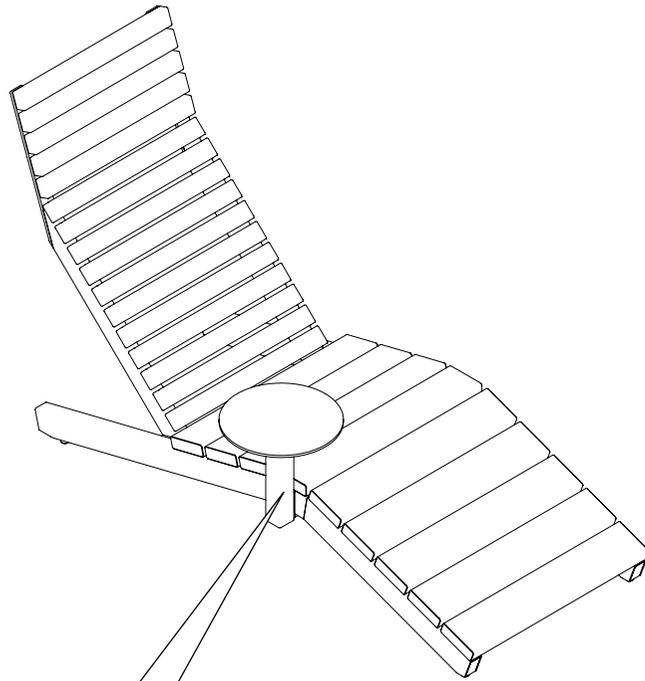
THE BENCHES WITH EITHER LED OR USB HAVE ONLY ONE POWER SUPPLY.



IT IS NECESSARY TO DISASSEMBLE THE COVERS TO PULL THE SUPPLY CABLE.

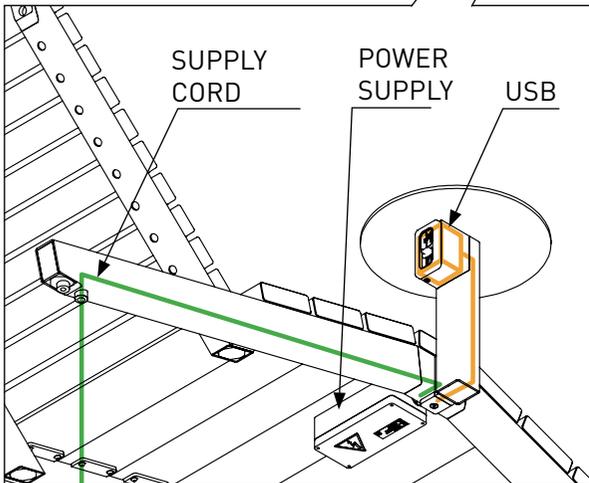
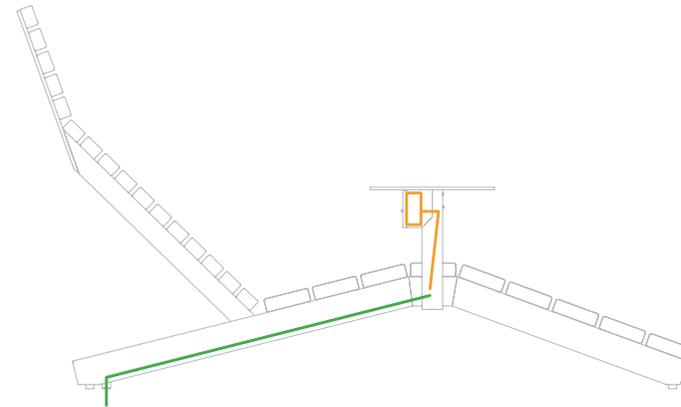
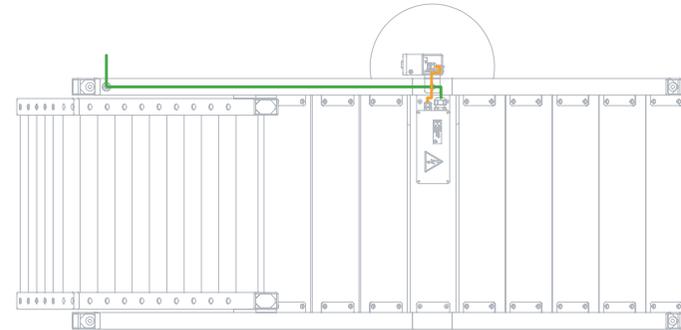
2.4

Rivage / example of use

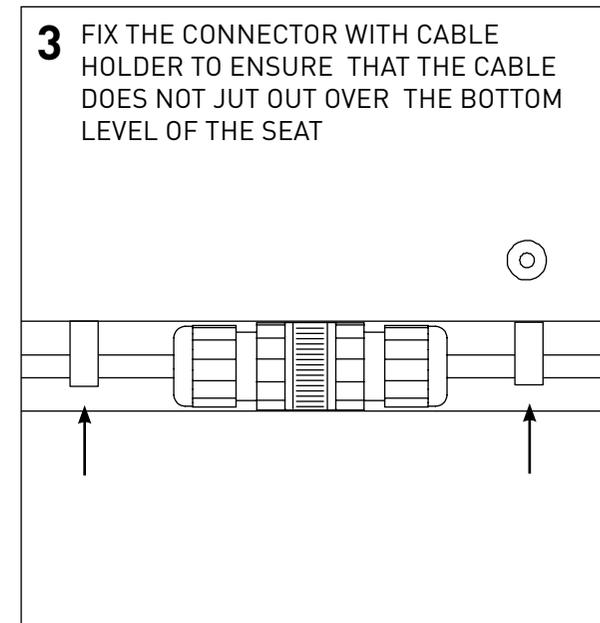
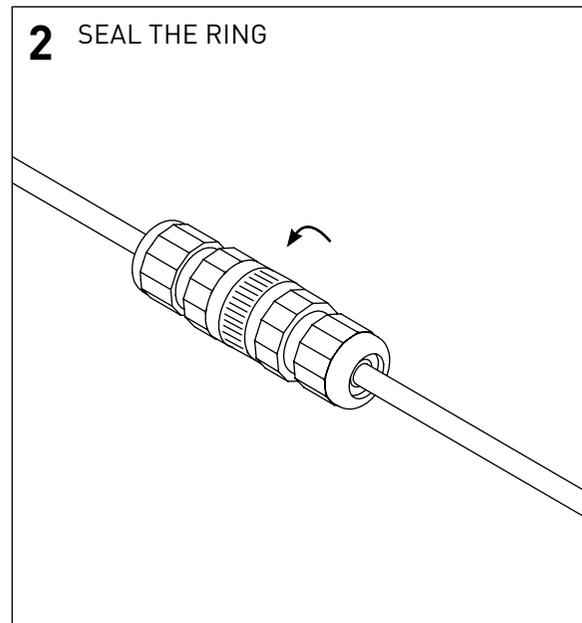
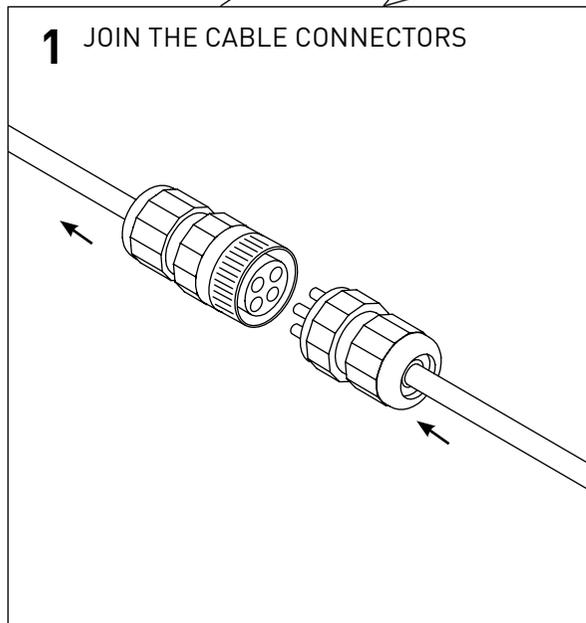
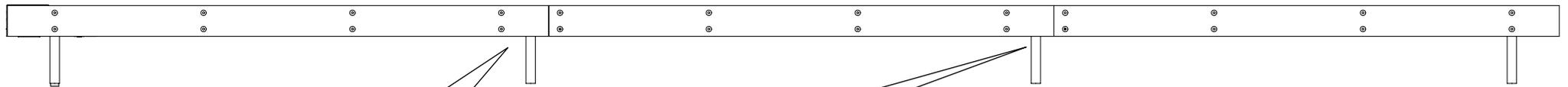


2.4

Rivage / example of use



THE PRINCIPLE OF THE CABLE CONNECTING IS THE SAME FOR ALL CONTINUOUS BENCHES.



SAFE USE:

The electrical equipment is suitable for outdoor installation.

It is always located at the bottom of the bench.

Electrical equipment is weather-resistant.

Electrical equipment is not resistant to mechanical damage and vandalism.

For any manipulation with the bench, the electrical equipment must be disconnected from the power supply.

If the external flexible cable or cord of the electrical device is damaged, it must be replaced and repaired only

by the manufacturer or manufacturer's approved technician or a person with the same qualifications.

The source in the electrical equipment may only be replaced by the manufacturer or manufacturer's approved

technician or a person with the same qualifications.

WARRANTY:

Any claim under warranty of the product will be accepted subject to following:

Electrical equipment is not mechanically damaged.

The electrical equipment is/has not been anyhow altered by third parties.

Regular check is/has been in accordance with recommendations.

Supply voltage is/has been connected accordance to this manual.

Installation is/has been carried out by the person with the appropriate electrotechnical qualifications.

MAINTENANCE:

Electrical equipment must be regularly checked and cleaned.
We recommend visual inspection and removal of obvious dirt - but do not wash out!

Minimal control interval is 6 months.

To clean the USB module, use the „Dust Off“ spray with compressed air.
In the event of damage, always replace the electrical equipment immediately.

Only use original accessories.

Carry on the maintenance when the device is disconnected.

IMPORTANT NOTE:

Under no circumstances it is allowed to make any changes to the electronic system of the
electronic equipment.

SAFE DISPOSAL:

This product can not be disposed of as household waste.
Proper disposal of this product will help to protect the environment.
For more detailed information about this product disposal please contact your local authorities
or a waste disposal company.

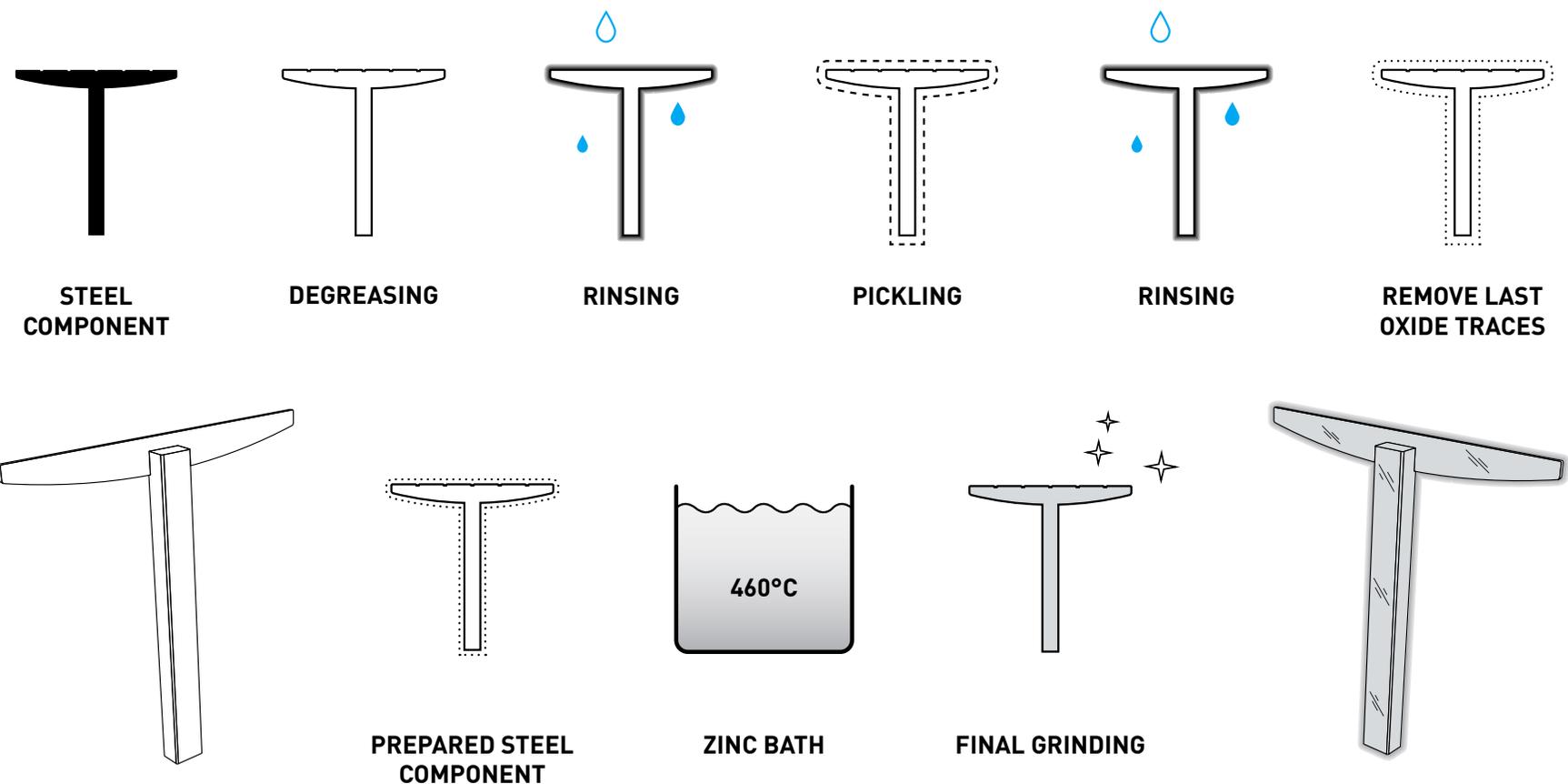
Hot dip galvanization



Hot dip galvanization

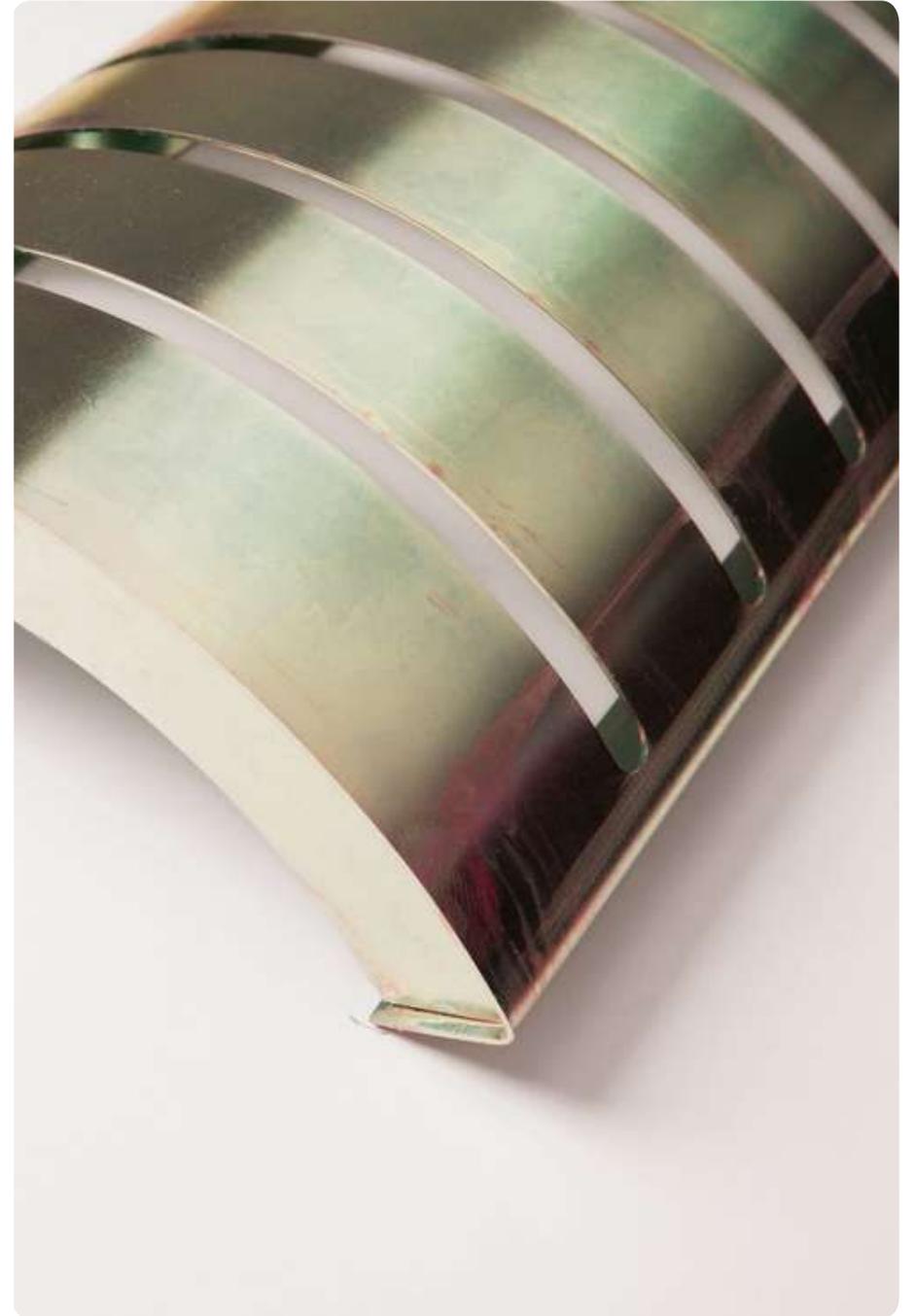
Zn

LAYER 40-80 μm



POWDER COATING (60-80μm) or ARCHITECTURAL ZINC

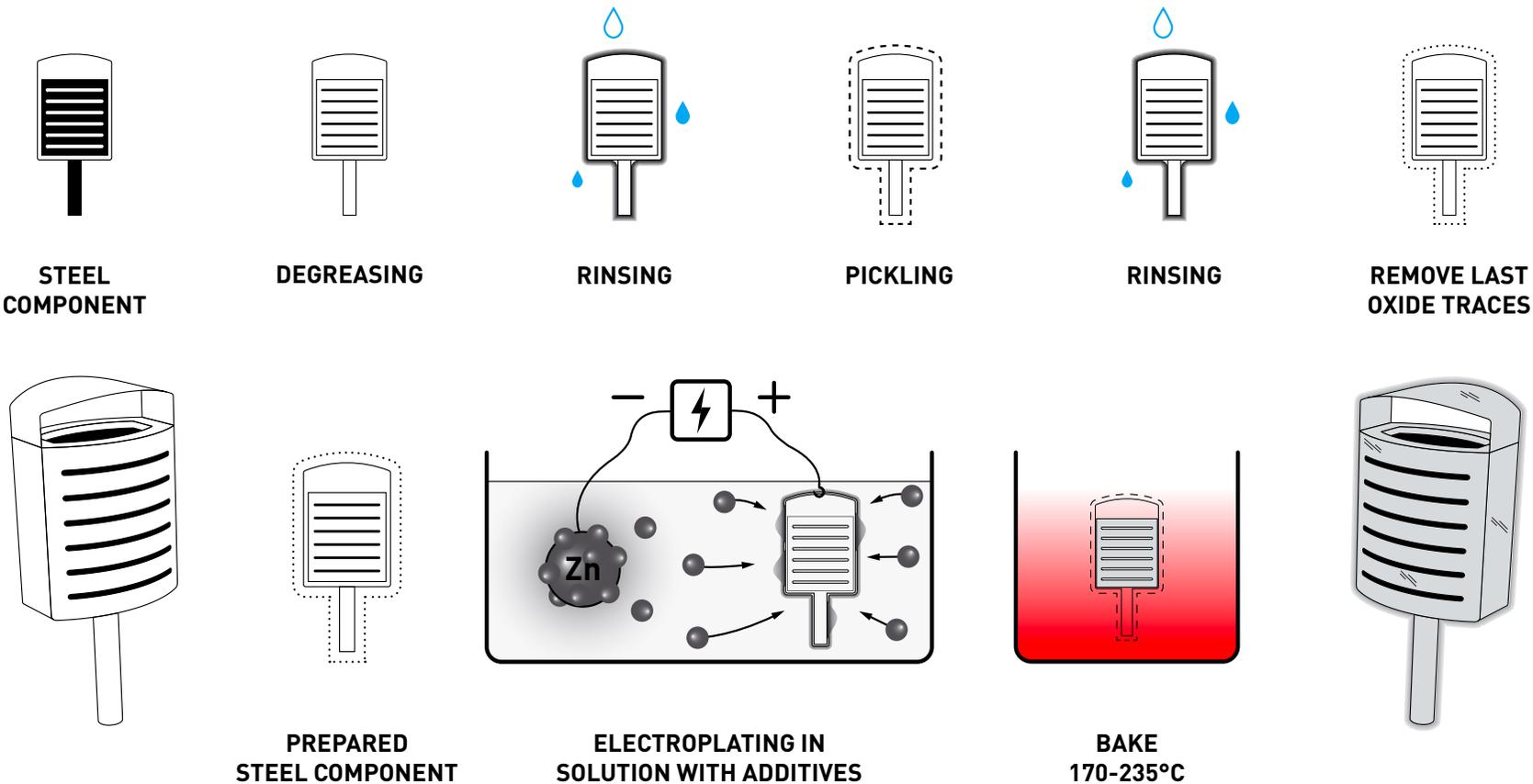
Electro galvanization



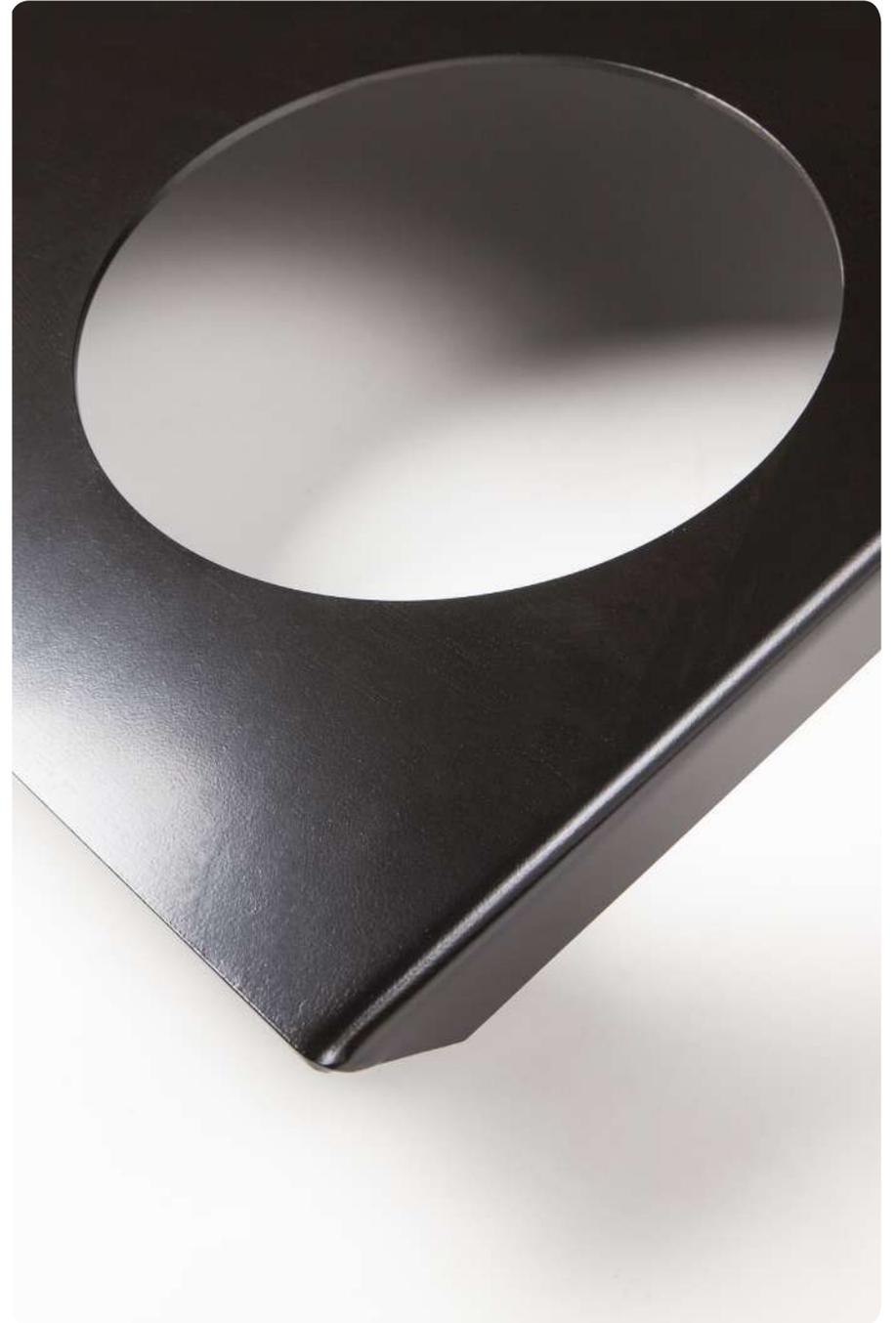
Electro galvanization

Zn

LAYER 5-25 μm

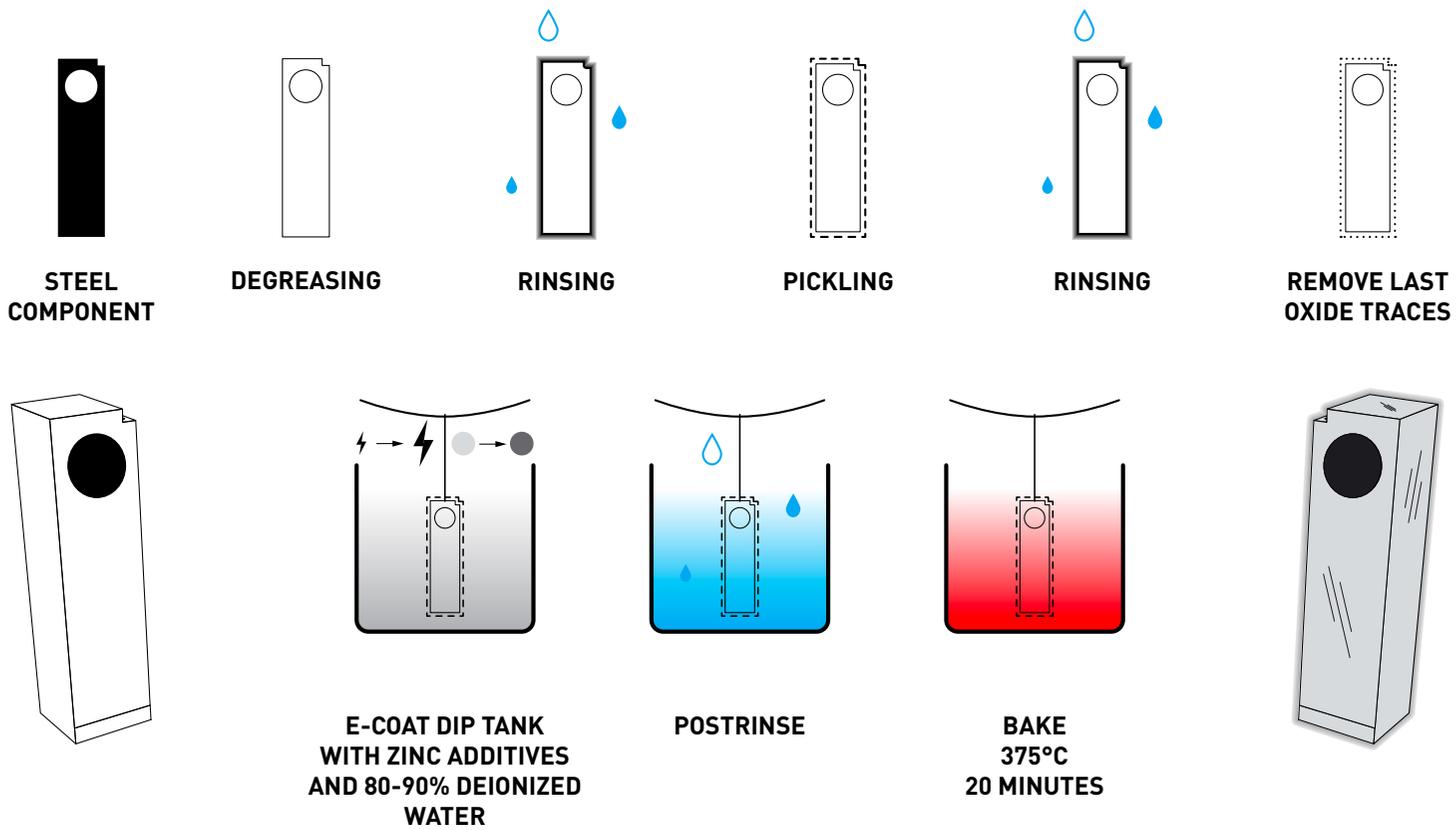


Electro coating



Electro coating

Zn LAYER 15-30 μm



POWDER COATING (60-80 μm)

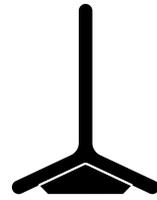
Zinc arch spraying (metallization)



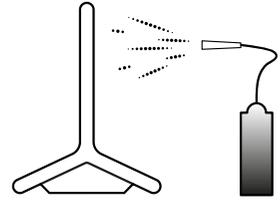
Zinc arch spraying (metallization)

ZINC ARCH SPRAYING (METALLIZATION)

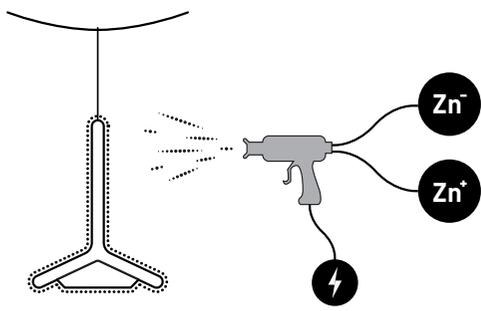
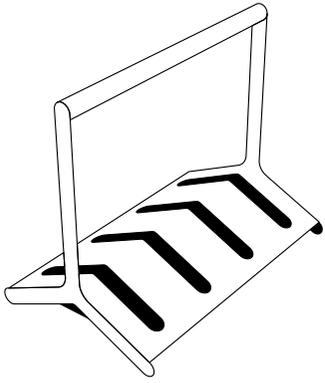
Zn LAYER 40-60 μm



STEEL COMPONENT



ABRASIVE BLASTING



SPRAYING CATHODE AND ANODE OF MOLTEN ZINC WIRE



POWDER COATING (60-80 μm)



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